AUGUST, 1874.

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Inorganic Matter	56.14 per cent.
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"AGRICOLAS." . . . . . *Virg.*

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

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Manures, Natural and Artificial.

In our July No. we gave the first portion of a lecture, by Prof. W. E. Catcheside, delivered before the Tunbridge Wells (Eng.) Farmers' Club, a copy of which was published in the Kent and Essex *Courier*, and kindly forwarded to the editors of the *American Farmer* by Prof. Morfit, formerly of Baltimore, but now of London. The subject of *Natural* Manures was treated on in that portion of the lecture published last month, and we now proceed to the fulfilment of our promise in giving the second portion thereof, on

Artificial Manures.

These are so numerous, and may be divided and sub-divided into so many classes, that it is a matter of great difficulty to me to give you any satisfactory account of them in a lecture like this. I must glance over some of them, and make a few remarks on them generally. The great difference between artificial and farm-yard manure is one of strength and concentration. Dung is a small amount of manure in a large bulk, whilst artificial manure is precisely the contrary. The great value of artificial manures depends upon the circumstance that they present their constituent fertilizing substances in a concentrated form. They contain large quantities of the substances which are present in small quantities in the soil, and of which plants require larger supplies than can be given through the medium of farm-yard dung. To use a homely simile, artificial manures are like a glass of spirit neat, whilst farm-yard manure can be compared to the same amount of stimulant in a gallon of water. Now you must not think that a good crop can be secured by the aid of these bodies alone, without the ordinary mechanical cultivation of the soil. In using artificial manures, it is very essential that the soil be pulverent. You remember the *pulverization of the soil is a mechanical effect of farm-yard dung;* it is not of artificial manures as a rule. But the most important point in the use of artificials, by far, is suiting the manure to the soil. Thus, land already well supplied with phosphate of lime—such as you will find on the green sand formation—would derive little or no benefit from super-phosphate or dissolved bones. Land rich in organic matter does not require organic manures, such as shoddy, wool, &c., but requires mineral manures, as bones, ash, guano, super-phosphate. Again, the condition in which you apply the manure to the land is of essential importance. Guano is frequently imported in hard lumps. Other manures also cake into knots and lumps. These should always be thoroughly pulverized, to allow of their being easily and readily dissolved in the soil. I may name as some of the principal and most common artificial manures the following: Guano, soot, bones, wool, rags, fish, sea weed, lime, gypsum, salt, nitre earth or nitrate of soda, oil-cake and dust, coprolites, &c. Some of the above, treated chemically, give:—Fixed guano, dissolved bones, shoddies, superphosphates, and hundreds—I think I may say—of patent blood and fish manures. These latter are for the most part mixtures of many of the other manures, and, when genuine, are, I think, the most useful. Guano is too important to be passed over entirely. Guano is the excrement of sea fowl, and is found in large beds in the South American Islands—adjoining the coast of Peru. Its fertilizing properties are chiefly dependent on the ammonia it contains. As the sea birds live on fish, we find phosphate of lime—the fish bone—entering largely into the composition of guano. Most of the Peruvian guano, which comes to this country, is tolerably uniform in quality, and may be considered genuine, as its importation is the exclusive right of one individual firm. Sometimes a cargo is sold having been damaged by sea water, and, where possible, is passed off as genuine guano by unscrupulous dealers. As guano is an expensive manure, you should never fail to see that it is genuine, by sending a sample to a respectable analyst, whose fee would be nothing compared to the saving you would effect were you being cheated. Many people think guano, if good, should smell of ammonia. This is a fallacy. Guano, if genuine, should *not* smell of ammonia. If the guano be moistened with sulphuric acid and dried, you will find the smell is precisely the same, although the ammonia has been converted into an odorless body by the sulphuric acid. A conmmon test of guano is its lightness. A bushel ought to weigh about seventy pounds.

Guano is adulterated with the greatest ease—without altering its outward appearance. I myself have known seventy per cent. of common brick dust in guano, and over forty per cent. of chalk in another sample. Both samples looked well, but smelt of free ammonia, which made me suspect their quality at once. Chemical analysis is the *only* way of avoiding being deceived, and determining the true quality of guano, or any other manure. I would advise you always to mix either salt or earth with guano when you use it, to extend the power of the guano over as large a surface as possible, for if a piece of guano were to lay in contact with a seed, its pungent properties would probably kill the plant. Bones are useful and very valuable manure, either in the raw crushed state or acted upon by acid. Let me mention, here, that the sole purpose of dissolving bones, coprolites, &c., is to render them soluble in water. The soluble portions of any manure are always the most valuable. Thus coprolites or phosphate of lime are totally insoluble in water, and, therefore, unfit for assimilation by plants, but when treated upon by acid a certain amount of their constituents are rendered soluble, and become washed down by the rain to the roots of the plant, which can then feed on the substances provided. * * * *

Farmers make a lamentable mistake in buying low-priced manures, for they pay the extra carriage of all their adulterations, which might be added at home. Nitrate of soda is a useful manure, particularly to force a crop in early spring. It is of no use dressing land with top-dressings late. The rain and early showers of spring must wash the manure down to the roots, or else no benefit will be felt. Lime is a most valuable manure, and acts both chemically and mechanically. It is useful for killing grubs, insects, and weeds, in addition to stirring up action and decay amongst organic matter. On a chalk soil its application, of course, is quite unnecessary. The dusts of various oil-cakes are strong fertilising agents, and are much used for hops. In making a few general observations on artificial manures, I may mention *that the best kinds to use are mixtures of the nitrogenous or ammonia manures and the phosphates.* You will find that you will be less liable to errors and do most good with these than by risking one special manure. The plan has the advantage of being a safe one. It is difficult to lay down any rules for the guidance of farmers, as no two farms are precisely alike. Every farmer knows, or ought to know, his own farm better than any one else can possibly do—either Liebig, Mechi, or any one else. Climate, soils, sub-soils, position, elevation, &c., all vary on almost every farm, and even one field differs from another field on the same farm. Before, therefore, you can hope to really farm to the very best advantage, it is necessary to be thoroughly acquainted with every field and the nature of its soil. I will, with your permission, give you an experienced (35 years,) farmers' opinion on manures, which I hope will interest you:—'I place my dependence on good *farm-yard dung* as the *only* thing applicable to *all* farmers. The artificial manures are mere guess-work, and the experiments upon one farm may be no guide for another farm.' (This is, of course, owing to the great variety of soils and their different compositions, and tends to confirm my point as to the necessity of every farmer carrying on experiments personally.) 'As far as my experience goes in the way of experiments, I have found very little to choose among the various kinds of artificial manures, taking them singly one against another. *In a very dry season* I fully believe they are all positively injurious to turnips and useless in the case of other crops. I have never trusted any of them alone, except as top-dressing to grass, corn or wheat, and in that case I prefer Gibb's Ammonia-fixed Guano to anything I have used. Probably a little nitrate of soda with it might answer. In top-dressing corn amongst which grass seeds or clover have been sown, I have found it not only greatly to benefit the corn, but the succeeding hay crop the following year. In 1872 I top-dressed half of a field, leaving the other half undone, and not only was the corn crop much better, but the hay crop the following year (last year) was exactly *double* upon the dressed part. I used only 2 cwt. of the ammonia-fixed guano per acre. If I were tied to using only *one* kind of artificial manure for roots or other crops, this is the manure I should prefer; but for roots I like a mixture of as many kinds as possible, not forgetting potash salts, and common salt.' (This view I have explained before to be correct, because, in using many kinds of manure, you insure putting into the land a certain quantity of *every* substance necessary for the growth of *any* crop.) 'You recollect one year (1870) I tried eight different sorts of manures for roots [swedes and turnips, the climate being too cold for wurtzels,] but the dry season prevented any definite results, except that a field I sowed with the remnants of each kind left—that is, a mixture of the eight sorts—showed extraordinary results, which confirmed my opinion as to a variety of kinds mixed being the safest plan to adopt. Last year I used for roots, and what I am going to use this year again, Ridley's manure mixed with dissolved bones and potash salts (Kainit.) You analysed Ridley's manure, and therefore know its contents.' (This special manure is made of a variety of ingredients—guano, coprolites, wool, leather, skin, hair, bones, rags, &c., and is a very excellent manure.) 'I had a splendid crop of swedes with it last year, but of course *I used a good dressing of dung with it.* The whole dressing consisted of, per acre—

15 tons of farmyard dung,
1½ cwt. Ridley's manure,
1½ cwt. dissolved bones,
3 cwt. potash salts.

(Value at about £4 10s. per acre.) 'The swedes were 30 tons an acre, and they are sound and good in the pits now. Many of them are from 10 lbs. to 14 lbs. in weight each. This year I am going to try a field of white globe turnips with artificial manure only, and I shall use 2 cwt. each of Ridley's manure and dissolved bones, and 3 cwt. of kainit. Mr. T—— told me he used artificial only for turnips, and put the farm-yard dung on afterwards for the corn crop. His reason for doing so was that upon a gravelly sub-soil like his farm, he considered manure of no use except for one crop, and he thought turnips could be grown with artificials only, but corn required the dung. I consider he is a first-rate man, and, as he farms at a high rent, no doubt

his view is right.' I would call your attention to the last sentence, which is full of meaning. His high rent demands the complete and perfect treatment of the land, and by experiment Mr. T—— has arrived at what he finds to be the profitable and successful treatment of his particular nature of soil. This, gentlemen, is the only way to farm to advantage. I would like to hear your opinions of some portions of this letter. Firstly, I agree with the writer about artificial manures sometimes doing harm, and also that they are only of real practical benefit for one season. In considering the manufacture of artificial manures, you must remember they are specially prepared for being dissolved. It is, then, highly possible that in a dry season they are more powerful absorbents of water than the plants they surround; hence the plants die from the fact that the surrounding thirsty manure deprives them of what little moisture the soil possesses. And in wet seasons there cannot be the smallest doubt that the rains wash away the whole of the artificial manure which is soluble; and that gone, what is there for next year? I think, myself, that phosphatic manures especially, which are treated with sulphuric acid, and are brought to a very high standard of solubility, do harm. They are like filling the land with an internal thirst. The only safe method of using artificial manures is in experimenting. Let each farmer try certain mixtures in certain quantities on the same area of land, and note the result. He will then see for himself which manure suits his requirements, and buy accordingly. There cannot be a doubt as to the immense value of artificial manures, and the impossibility, indeed, of being without them. Let us use every means, then, to become conversant with their characteristics and properties. I do not intend to trouble you with the details as to the determination of their quality and monetary value, but I will venture to put before you the importance of examining your manures before purchase. The commercial customs of the manure trade are bad. Long credit and small prices mean, as a rule, cheating and deceit. If a manure is a good article, you may depend upon it, it is worth its fair price. I am astonished that this fact does not seem to be more generally recognized. If good and respectable and well-known firms—and they are the proper people farmers should purchase from—offer guano at say £13, how is it possible that a small trader can offer the same article at £12? And yet many farmers, whose generosity and good nature are imposed upon, are talked into buying the latter article, simply because it is lower in price. They find out that the £13 article is better worth their money than the other, and that they are losers. How often this is the case, and how simply it can be provided against! Farmers object to paying the analyst's fee, which in most cases is only one per cent. on their purchase, and often five per cent. only of their losses. I venture to draw your serious attention to this question. True economy in commercial transactions is not only getting a low-priced article, but in being sure that the article is worth the price paid for it. I think *Farmers' Clubs* would do well to entertain the habitual practice of watching over the pecuniary interests of their members, and they would do so in retaining the services of an analyst to examine the samples of manures purchased by the members. This would induce an increase of members to the clubs, and incite extra activity and care amongst manure manufacturers. I know of one club in the north of England which has pursued this policy for some years, and with which I am connected as analyst. Samples are sent to me, and their analyses are posted in the club-room for the inspection and criticism of the members, who choose for their own consumption the manure they think the most worthy of their money. I also think that bad samples should be examined when met with, and the analyses made known to the members, as a caution and guard against fraud. The adulteration of manures, and foods also, is a growing evil, and a most serious matter to agriculturists and the community, who suffer proportionately. Honest manufacturers also are injured and their trade confined, owing to the reluctance of farmers to buy. Dr. Sibson says in his admirable little work on Agricultural Chemistry: 'The best way of procuring artificial manures is to purchase them of manufacturers, or dealers, of known respectability, who will readily guarantee the manures they supply to be of a particular strength, according to analysis. But, as the manures manufactured by the best of makers often pass through several hands before reaching the consumer, it is proper, in all cases, that the manure received should be tested in order that the buyer may satisfy himself of its quality, and that it is worth the price paid for it. This is easily done by taking a sample from two or three of the bags of manure, and forwarding it to an analytical chemist of recognised respectability and skill, who will readily ascertain the composition of the manure, and whether it corresponds with the analysis of the dealer. I quote this passage as being a most complete corroboration of my foregoing remarks. I know that this lecture is incomplete and cramped, as the subject will barely admit of anything but a detailed examination. I trust, however, that some points in it may be found worthy your attention, and it will afford me much pleasure in hearing you discuss the several matters I have submitted for your consideration. For your guidance, I will, if I am not detaining you too long, condense my remarks under three heads:—Firstly—The nature, use, and effect of farm-yard dung; secondly—the utility and application of artificial manures; and thirdly—the importance of chemical knowledge to farmers. You are well acquainted practically with the two first headings, and, in conclusion, I must once more urge upon you to consider the third division. There is no doubt that chemistry is the 'coming' matter of attention for agriculturists. It is of inestimable value in many ways to them. I hope I have succeeded in proving this conclusively. No words of mine can put before you the immense importance to and the happy influence of chemistry on the farmer's daily routine of life.

Questions were then asked on the several subjects referred to in the lecture, and Mr. Catchside promised to answer them in detail on a future occasion.

[These questions and answers will be given in the Sept. No. of the *American Farmer*, and will conclude the subject matter of this lecture.]

Wheat Culture.

As the time for preparation for the wheat crop is now upon us, the following facts from a paper read at a late meeting of the New York Farmers' Club, are worthy of attention:

Mr. Paddoc, the writer, in a previous communication stated that, in the last ten years, he had grown thirty bushels of wheat to the acre; that in the Fall of 1871 he had harvested 350 bushels of wheat from 17 bushels of seed, "and one acre of that was nearly winter-killed and hardly worth harvesting;" and that in another lot of two and three-fourths acres he had harvested "119 bushels, and this by weight, not measure, in a small one-half bushel." He was interrogated concerning the kind of soil upon which his wheat had been grown. He replies in his letter that the soil was loam and clay. The land was formerly covered with heavy pine timber. Four acres of it were clover sod, and the remainder barley stubble. It was plowed once, and that in the last of August, and the wheat, sown in the first days of September, was put in with a drill, one bushel and three pecks of Treadwell wheat to the acre. No fertilizer was used, except a very few loads of barn-yard manure, which were put in the poor places after the wheat was sown. There was no extra labor exercised in the production—nothing more than good plowing and cultivation.

In connection with the subject of wheat culture, Mr. Mechi, the great English farmer, in an article published in the *Farmer* some months since, gave his experience in the use of salt as a manure, and the following views on its operation given in a late article in the *Royal Agricultural Society's Journal*, by Prof. Voelcker, will probably elucidate the manner in which salt operates in connection with manures, especially those of an ammoniacal character:

"A distinct proof is given that common salt has the power of liberating ammonia from soils that have been highly mannured from rotten dung, Peruvian guano, and other ammoniacal manures, which in sandy soils especially, exist in feeble combinations, that readily undergo decomposition when brought in contact with a solution of salt. In the case before us, a portion of chloride of sodium (salt) acted upon these feeble ammoniacal combinations, producing on the one hand soda, which became fixed in the soil, and on the other chloride of ammonia, which passed into solution.

"This analytical result throws light on the function of salt in agriculture. It is well known that salt is most beneficially applied to light land after a good dressing with barn-yard manure, alone or in conjunction with Peruvian guano, and that its application under these circumstances is particularly useful to wheat crops in general. Practical experiments on a large scale have shown, indeed, that by salt alone a large increase of grain was produced off land in good heart—that is, had been previously well manured. In this case the application of salt evidently has the effect of liberating ammonia, and rendering it available for the immediate use of our crops, which we know from experience are much benefitted by it. On land out of condition, salt must not be expected to produce such favorable effect, and as this manure no doubt is sometimes put upon land exhausted by previous cropping, in which, therefore, it does not find ammoniacal compounds upon which it can act, one reason becomes evident why salt is inefficacious as a manure in some cases, while in others its beneficial results are unmistakable.

"Peruvian guano and salt is a favorite dressing with many farmers, and justly so. It has been supposed by agricultural writers that the benefits resulting from this mixture are due to the property of salt to fix ammonia. I have shown, however, elsewhere, that good Peruvian guano does not contain any appreciable quantity of free ammonia. While theory has erred in ascribing to salt a power that it does not possess, the practice of mixing guano with salt is one which can be confidently recommended. So far from fixing ammonia, salt rather tends to liberate and disseminate through the soil the ammonia contained in the Peruvian guano applied to the land, which becomes fixed by the soil."

Deep Plowing as a Preparation for Wheat.

We have always been one of those who advocated not only a thorough preparation of the land, but also its deeper disturbance than is ordinarily practiced, as one of the requisites for producing good crops of the cereals; and we have considered the advice of John Taylor, of Caroline, ever an oracle on Farming in Virginia, long ago given his "*Arator*" as founded in reason and philosophy. He says deep plowing, in our hot and dry climate, tends to "the preservation of the moisture and the inhalation of the atmosphere," and that to these are to be added "the deepening of the soil and an increased pasture for the plant." The benefits it is accustomed to describe as proceeding from deep plowing (where there are no injurious elements in the soil within reach of the plow) and sub-soiling, are the facility with which surface water passes below the roots of the plants in winter, thus protecting them against winter-killing; the ability of the soil to withstand injury from drought; the subsequent porosity of the soil, which admits of free access of air to neutralize injurious salts existing in the soil, &c.

Mr. Mechi, the great farmer of England, has always contended in favor of deep plowing, and in a recent letter in the *Scotch Farmer*, he asserts with great energy—"The more I prove practically, after thirty years' trial, and read or reflect, the more I become convinced that those who deprecate a deeper disturbance of the soil, are doing a great agricultural mischief, preventing improvements and profits." He says in the article, which is worth a careful reading, after an allusion to the great debt by agriculture to the investigations of Liebig:

"The root fibrils will always extend in that direction in which they encounter the least resistance. Of the cereals, wheat, with a comparatively feeble ramification of roots in the upper layers of the soil, still forms the strongest roots, which often penetrate several feet down

into the sub-soil. On the length of roots few observations have been made. In some cases it has been found that lucerne will grow roots 30 feet, rape about five feet, clover about 6 feet, lupine about 7 feet in length. A proper knowledge of the radication of roots is the basis of agriculture * * * therefore, to secure a favorable result to his labors, the farmer should prepare the ground in a proper manner for the development and action of the roots. * * In the second half of the period of development, the roots of the turnip plant having penetrated though the arable surface deep into the sub-soil, absorb more potash than in the preceding stage. If we suppose that the absorbing spongioles of the root reach a stratum of soil poorer in potash than the upper layer, or not sufficiently rich in that material to yield a daily supply commensurate with the requirements of the plants, at first indeed the plant may appear to grow luxuriantly; yet the prospect of an abundant crop will be small, and the supply of the raw material be constantly decreasing, instead of enlarging with the increased size of the organs. The vigor with which cereal plants send forth their stalks and side shoots corresponds to the development of the root. Schubert found as many as eleven side-shoots in rye plants, with roots 3 to 4 feet long; in others where the roots measured 1½ to 2½ feet, he found only one or two; and in some, where the roots were but 1½ feet, no side-shoots at all. * * * * * *

The true art of the practical farmer consists in rightly discriminating the means which must be applied to make the nutritive elements in his field effective, and in distinguishing these means from others which serve to keep the desired fertility of the land. He must take the greatest care that the physical condition of his ground be such as to permit the smallest roots to reach those places where nutriment is found. The ground must not be so cohesive as to prevent the spreading of the roots. * * All these observations tend to show the great importance of the mechanical conditions which impart fertility to a soil not originally deficient in the means of nourishishing plants; and that a comparatively poorer, but well-tilled soil, if its physical condition be more favorable for the activity and development of the roots, may yield a better harvest than richer land." Combined with deeper cultivation, we should have that which it facilitates— I mean drainage. Liebig says in his "Natural Laws of Husbandry," p. 290, "The influence of a proper physical condition of the soil upon the produce can hardly be more convincingly proved than by the facts which agriculture has derived from the drainage of land, under which we comprise the removal of the sub-soil water to a greater depth, and the quicker withdrawal from the arable soil of the portion circulating in it. A great many fields, unsuited by their constant humidity for the cultivation of cereal plants and the superior kinds of forage grasses, have been reclaimed by drainage, and made fit to produce food for man and beast. When the farmer, by means of drainage, keeps within bounds the amount of water in his fields, he controls its injurious influence at all seasons; and by the speedier removal of the water, which soaks the earth and destroys its porosity, a path is opened for the air to reach the deeper layers of the ground, and to exercise upon these the same beneficial influence as upon the surface soil."

THE FULTZ WHEAT.—We have not yet heard sufficiently to form any opinion as to the best varieties of wheat, in the crop just harvested—as a general rule, wheat has yielded well everywhere, and we suppose that all the several varieties usually sown have given satisfaction. In some portions of Virginia and North Carolina, however, the crop has not turned out as well as was expected in the earlier part of the spring, the rust having attacked it, and the yield has since been found deficient. The *Petersburg, Va., Messenger*, says of the crops heard from, that whilst other varieties suffered from the rust, the Fultz escaped with but little damage. It adds:

"After the heavy rains of the 7th of June rust ceased to injuriously affect the wheat; its attack having been confined to the blades and not the stalk, the injury was not so great. The crop, however, will suffer the diminution of many thousands of bushels from "blade rust," as this mildest form of rust never fails to effect injuriously the yield. It would be worth millions to know how to prevent rust. Until that is known our safest plan is to sow that kind that is least affected by it. The Fultz has proven a *desideratum* in this respect, and like the rust-proof oat of the South, is destined to grow in favor as its virtues become known. But aside from the effects of the rust, the yield of wheat will not be near so good as the crop once promised."

Effects of Good Cultivation.

An improved system of farming is gaining ground in the South, and we are always ready to rejoice with the tillers of the soil in every effort to effect a change for the better. A traveller in Alabama writes to the *Columbus (Ga.) Enquirer*, that in the vicinity of the Lime Works of Yongesboro, he met with Mr. Clapp, the superintendent, whose crops recalled the productive fields of Kentucky to a resident of the blue grass region Red clover was growing luxuriantly. It had received one mowing, and is now about two feet high. There were several fields of "German millet" that would soon be ready to cut, and will make from two and a-half to three tons of superior hay to the acre.

"Mr. Clapp was busily engaged in harvesting a fine crop of oats with a Buckeye reaping machine, which did its work rapidly, effectively and satisfactorily. The negro driver seemed to be as much at home in operating the machine as he would have been behind a plow.

"Next came the corn crop, and it is the finest upland corn I ever saw. Mr. Clapp has 75 acres that will make from 40 to 50 bushels per acre, and another portion is expected to produce 60 bushels. This field is his especial charge, as he wished to see how much corn could be made on the land. The farmer that cultivated the land previous made from 5 to 7½ bushels, and the fields

now adjoining will not exceed 10 bushels per acre. The land is light pine soil, and some portions had been turned out as worthless. The secret of Mr. Clapp's success has been in deep plowing in the fall, thorough cultivation, and a judicious application of fertilizers composted at home.

"He planted a measured acre in cotton, which yielded him 513 pounds, lint—a good yield for poor pine land. He wished to make an experiment of deep plowing in the preparation of cotton land, using a four-horse plow, followed by a subsoil, breaking the land 14 inches deep. He, in the presence of others, pulled up several stalks of cotton, the tap-roots measuring 13 inches. This proves conclusively, to my mind, that deep culture is the thing, in the first instance, followed up by a judicious application of home-made fertilizers and thorough cultivation."

Although this showing will not compare with the yields of some of our friends of Baltimore county, where they are trying for *thirty barrels* to the acre, yet some of the lands of the latter, like those of Mr. Clapp, had been turned out as almost worthless, but good cultivation and manuring have produced twenty or more barrels to the acre.

Peruvian Guano.

One of the editors of the *Farmer* at the May meeting of the State Agricultural Society offered a resolution which was unanimously adopted for the appointment of a committee, of which the President was to be chairman, to wait upon the agent for the sale of Peruvian guano in this city to ascertain whether some arrangement cannot be made here similar to one which exists in the city of New York, by which farmers desiring to purchase small quantities of this fertilizer may obtain the same at the agent's price and from his warehouse. A committee was appointed, but so far they have not been called together, and consequently no action has been taken.

A few words concerning this motion, the grounds upon which it was offered, and its intended operation, will now be not unseasonable.

Years ago, as soon as guano was fairly introduced into this market and its effects became known, its use spread with amazing rapidity, and so highly were its virtues extolled that it early came to be sought as the panacea which was to cure all the ills our lands were subject to. Our readers know the result of this infatuation. The economical saving and judicious use of home-made manures was neglected to a great extent, when it was believed that a handful of this new "Marvel of Peru" was to do more good than a cart-load of dung or compost. Soon larger and larger doses became necessary to produce equal results, and it was found that this substance, which stimulated but did not strengthen, would ultimately reduce the lands to which it was applied to a state more miserable even than their first condition. As a consequence of this, of later years, save in exceptional cases and those mostly to be found among tobacco planters, the use of unmixed Peruvian guano is nearly abandoned. The proportion of all that comes to this port reaching the hands of the farmers, save as an ingredient of the various ammoniated phosphates, is, we presume, very small. Such supplies as are bought by the farmers generally come through the manufacturers, who deal in it as a subordinate part of their business; and some of the most extensive of whom assure us that they would prefer not to sell it at all, and do it as a matter of accommodation, though of course they do not handle it in this way without a fair margin of profit.

We published some months ago in the *Farmer* an account of the exposure of the frauds practiced in New York city in the sale of this article. An examination made by a chemist of some ten samples procured from as many dealers by a committee of the N. Y. State Agl. Society, showed that only *one* of the whole number was unadulterated.

The Peruvian government, by its agents, afterwards instituted suits against the parties who had been engaged in these nefarious practices, and the proceedings in the courts develop little to afford much cause of complacency to those who have been buying their guano in that market.

So far as our city is concerned, for a number of years, we have seen nothing ourselves, nor has any information reached us from abroad of any impositions practiced in this trade. The gentlemen now engaged in this business in Baltimore, so far as we know them, we believe to be above reproach, but the trade of our city, it seems to us, is liable to be diminished, if not cut off, in a manner to which we will now refer.

Since the discovery and exposure of the frauds in guano in New York, above alluded to, a person there, who seems to have the endorsement of the Peruvian financial agents, if indeed he is not really acting under or for them—as would seem probable from circumstances coming to our knowledge—advertises that he is prepared to sell guano in any quantity, large or small, to farmers and others, delivered from the agent's warehouse and at the agent's prices. Further than this he offers to deliver the same guano on any railroad or at any port accessible from New York.

We are not prepared to say how this is done, or whether the advertiser in question can do what he offers. But we do know that farmers and planters whose natural and usual market is Baltimore are obtaining their supplies from this house in New York, and that our city is losing trade, certainly, to that extent, and as a result probably to a much greater one. To remedy this, by securing the inauguration of a similar plan here, was the object of the resolution passed by the State Society. Since its passage we have been informed—as has also, we believe, Prest. Davis—by a gentleman, largely engaged in the fertilizer trade, and of ample responsibility to carry out the project, that he is prepared to make arrangements with the agent here to manage this business in the same manner that it is conducted in New York, provided he can have some assurance that the farmers will second his efforts, and that the State Society will at least throw the weight of its influence in favor of his undertaking.

We do not know whether there is margin

enough allowed to warrant the gentleman referred to attempting this by buying in large and selling in small lots, or how he proposes to conduct the business; but we are emphatic in our expression that such an arrangement ought to be made here, if practicable; that the farmers of Maryland and Virginia should not go to New York for their supplies of guano under the belief that they can buy there on better terms or under surer guarantees of quality than in Baltimore. We may be pardoned for saying that we were very largely instrumental in leading to Baltimore the trade in Peruvian guano which at one time assumed such great proportions, and from which, as a result, sprang up the business of making artificial manures, which may be counted one of the largest and most important branches of the commerce of our city. This great interest must inevitably suffer, if a sufficient break in the trade is made to carry to New York a portion of the purchasers. This result we should very much regret to see.

Agricultural Fairs, and Trotting and Plowing Matches.

Mr. Crozier, a well-known farmer of Long Island, New York, in a letter to the *Country Gentleman* says he finds in that paper "a good deal concerning horses raised for speed, but far less for the horse which produces the staff of life for man and beast," and continues—

"Please turn the attention of your readers occasionally to horses bred for agricultural purposes—a class which should have a prominent place. Give him a chance to rise in the estimation which he well deserves as meriting greater attention from farmers than the swift trotter.

"Next, give us a plowing match next fall—prizes to be awarded as follows:

1, For the best plowed acre under the rules of the Highland Agricultural Society of Scotland, large gold medal, worth $100; 2, Silver medal or cup, worth $75; 3, Silver medal or money $50; 4, Cash prize, $25; 5, Cash prize $10. I will pledge myself to raise the necessary funds ($260) to pay the prizes on the day of the match. Give an open field the first year. I hope you will consider this over, and not drop it. If carried out successfully, it will accomplish more for the young men of the State than all the horse trots that can be got up."

The editor replies, in substance, that the larger interest is taken in trotting horses because of the apparent determination of farmers to breed in that direction, but promises his earnest co-operation in promoting increased popularity in "agricultural horses." As to the Plowing Matches he says he has often expressed surprise and chagrin that they have never been naturalized on American soil; that the N. Y. Society for a long period held annual matches during its shows, but they excited little attention and the work done was of so little credit, while the progress of time seemed to bring no progress either in competition or in workmanship—that the effort was abandoned. The liberal offer is made of a subscription of $50, towards the amount named by Mr. Crozier, in case the matches are revived.

In the *Country Gentleman* of two weeks later date we find the following letter, which, from the initials, will be recognized as from the president of our own State Society:

"In the *Country Gentleman* of June 25th, the suggestion of Mr. Crozier, and your liberal response, for more prominence to the farm horses (as contradistinguished from trotting and race horses) and plowing matches, is timely and important. A small effort in that direction was made by the executive committee of the Maryland State Agricultural Association at its recent session, by placing the premium for the best farm stallion on an equal footing with that for the best blooded stallion ($100 for each,) and by increasing the premium for oxen from $50 to $100, divided into three classes—first premium, $50; second, $30; third, $20. At the fairs held in this State, fifty years ago, the plowing match was *the* feature of the exhibition, witnessed and patronized by the foremost citizens of the State; but of late years, for want of space near large cities, or other unexplained cause, the trial of the plow, the most important invention of man for subduing the earth, has been superseded by trotting matches, scrub races and mountebank shows. This argues a degeneracy in the management of agricultural fairs, for the correction of which Mr. Crozier's suggestion and your response are most excellent, and worthy of consideration and adoption.

"The horse is a noble animal—too important to the farm and the road to be overlooked or ignored. But when all qualities and uses are thrown in the background except for the turf and the trotting circle, it shows a vitiated taste, and a want of appreciation of the many uses for which the horse was intended, and to which he is adapted and indispensable. I therefore hail with satisfaction a movement, with your endorsement and approval, for a reform in the management and mode of conducting our agricultural fairs. If these fairs cannot be conducted without such vicious and extraordinary aids, then it is time to consider whether their period of usefulness has not passed, and whether they had not better be less frequent, if not altogether abandoned. A. B. D.

Brookeville, Md."

Agricultural Fairs.

The *Germantown Telegraph*, one of our oldest, most conservative and carefully-edited exchanges, with an eye always open to every kind of imposition and chicanery, but with no great fuss to make about it, refers to a state society which offers $20,000 for premiums, but of which it discovers that "*ten thousand dollars* went for horse trots, and of the balance large sums went for articles having but the remotest influence on agricultural improvement," and thus discourses thereupon:

This particular premim list is to be sure the strongest one in these especial lines before us; but a great majority are no better, and it is a matter of astonishment to us that sensible agriculturists have so long permitted themselves to be dragged at the tail-end of a horse in this matter of encouraging agriculture.

A few of our best societies have, however, asserted the right of pure agriculture to some sort of a recognition over mere horse-jockeys and black-legs, and have cut loose altogether from racing in every form as having little to do with progressive farming. The New York State Agricultural Society is one of these, and so tenacious is it of its reputation in this respect that it has had recently to give notice that though accepting the tender of a driving-park to hold its annual exhibition on, it had no connection with or responsibility for any races that might take place on the grounds.

That it was thought necessary to make such an avowal, shows a healthy state of public sentiment which one can but hope will extend to other communities and other States, and result in keeping the horse-race where it properly belongs.

This is not a question of fast horses. No one wants a slow team when a fast one would do just as well. There might possibly be no objection to trials of speed as a subordinate part of an agricultural exhibition, as all other parts are subordinate; there may or may not be grounds for good arguments, but there can be no doubt in the minds of many right-thinking men and women that the great prominence usually given to the horse-race at fairs is a fraud on agriculture, and tends to demoralize much more than it tends to build up human character.

We know what the excuse generally is. The exhibition must be made attractive in order to pay, and nothing attracts like the horse-race. But if we look at the success of those societies who defend this abortion on this plea, and the success of the New York Agricultural Society which repudiates it, we find the success much in favor of the latter. And then outside of pecuniary success, look at the influence on real agricultural prosperity and see how much more is it in favor of the New York Society's plan. Intelligent agriculture is more prized there than perhaps anywhere, and her agricultural elements have been improved to an extent which no other State can surpass. And her exhibitions are just as prosperous, pecuniarily, as well as in attendance, as any in the Union.

We look forward to the time when these things shall be more clearly perceived than now; when real agriculture shall in most societies take the front seat instead of the back one, and when the managers shall have the moral courage to do what is right, in the full confidence that the great farming community will sustain them.

Management of Fine Yellow Tobacco.

From an essay by Mr. Leftwich, to which was awarded a prize by the Border Agricultural Society of Va. and N. C., we extract the following:

Within a few days after the last working, the time for topping will have arrived; and when to begin, is the question next for our consideration. It is quite a temptation to see some two or three thousand fine thrifty plants sufficiently large, some buttoning to blossom, others fully blown, that the most planters are ready to upbraid us with neglect. But if your tobacco has grown properly, with leaves of ample width, the first topping should be postponed as long as possible, not to allow the stalk to become hard. By thus waiting we get a much larger number of plants, and the growth is made much finer thereby, and the leaves are better distanced on the stalk, thereby allowing a better exposure to the sun; and as the stalk attains better height, there is less damage than would result if topped early and allowed to spread near the ground. It is with some a matter of doubt, whether the growth is made finer by this expedient of letting it "run up;" this, however, cannot be reasonable. When thus managed, the vascular system of the plant receives, as it were, a given form and calibre, which is not so susceptible of expansion as when the mere bud is pinched out, the top leaves left small, and their delicate sap vessels capable of almost indefinite expansion, do expand until the stem of the leaf is apparently but a continuation of the stalk of the plant, such is its degree of development. We know this practice will prevent the leaves attaining the same width as the opposite one, and will also curtail the weight of the crop considerably; but both these results are desirable, if we wish it strictly fine. Our effort is for *quality*, not quantity. The number of leaves to be left on each plant, must depend upon the strength of the land, appearance of each plant, time of topping with regard to season both prior and subsequent thereto. Without knowing the exact appearance of the plant, its capacity, and every circumstance connected with it, no one could say what number of leaves it would bear. On superior land, with no lack of moisture, and all circumstances being propitious, we may top very high, and *as high as possible to procure good leaf and allow perfect maturity*, is the only rule by which we can be governed on any land in raising fine tobacco. After we have topped, if it should seem not to advance favorably, as indicated by a slow and narrow growth of the top leaves, we can reduce the number as low as the plants seem to indicate necessity therefor. Some of our finest tobacco growers do not strip off any of the ground leaves. We think it best to "prime" when we give the last hoe working, and sufficiently high to insure a leaf of good size and substance. The second and third toppings, like the first, should be as large as possible; the third, somewhat lower than the former. After the third, we may top as plants present themselves in height according to time, their respective vigor, and the character of the season. The scions or suckers must not be allowed to remain on tobacco any longer than can be avoided. They should never get more than four or five inches in length. Their presence too long will injure the calibre of the sap vessels supplying the leaf with nutriment, and thereby prevent a perfect development. It is possible that those growing near the ground, below the leaves, may, *after the plant is fully ripe*, serve to deplete the plant of any redundancy of sap—especially, if the season is or has been a wet one; but in no case let them attain such height as will afford shade to the plant. The arduous task of worming and suckering, in a crop of much size, is never finished until the crop is saved. Generally about the latter part of August and 1st of September, some of our crops are

ready for the knife. If every precaution has been observed, land well-adapted, season propitious, it will have grown fine, sufficiently large, and ripened yellow. Such being the case, our prospect for success is very flattering; much, however, remains yet to be done. The crop, now beautiful and full of promise, may be mismanaged and result in perfect failure. With the planter it is all important that his crop be saved early; want of time to save from frost, is of all things most harrassing, and every experienced tobacco-curer knows well the difficulties with which he contends in his efforts to cure after the season has advanced. The weather becomes more liable to sudden alternations, which often defeat success. Having all things ready, our barns in dry, tight condition, with an ample supply of *good, large, hard charcoal, under a good shelter*, we may begin cutting plants of equal size, maturity, and cast as nearly as possible, being careful to split each stalk in the centre, and as low down as possible not to allow complete separation, then sever the stalk as near the bottom leaf as you can, and put the plant gently to one side, with base of the plant towards the sun, and proceed with the cutting as rapidly as possible. The plants are immediately conveyed to the barn, while they are yet stiff. Do not delay, thinking they will break less and admit of being hauled in larger loads, &c., by having collapsed. This is a dangerous practice, and must not be allowed. If we could, we would always follow after the cutter with stick in hand, hang, convey to barn *by hand*, hoist and regulate. If large, only five or six plants to each stick; if small, seven or eight.

Agricultural Calendar.

Work for the Month—August.

With the incoming of this month there is some respite to the farmer from the severer toil of the summer. Not that there is often on a well-ordered and well-regulated farm much time when abundant work cannot be found ready to the hand, but it is less urgent; and when an opportunity offers now for recreation and rest, there is no reason why it should not be availed of.

Plowing for Wheat.—As soon as possible this work ought to be done, and the more thoroughly the soil is pulverized the better will be its yield. Deep plowing is a great protection against winter killing by promoting the discharge of surplus moisture, but shallow cultivation does more to destroy the weeds. Manure for wheat and rye ought not to be plowed under too deep.

Sowing Rye.—Some of the best farmers of this State endeavor to get this crop in the latter part of this month, whilst others prefer to wait until the beginning or middle of next. The conditions of success are, however, the same, and we will briefly allude to them. Rye likes a soil rather sandy in its nature, but it is idle to expect much of a return from any land not in good heart; and this is a crop which will repay you for any extra care in the preparation of the soil, or for any extra portion of manure you may apply. Ten to twelve good loads of stable manure, or 200 or 300 lbs. of a reliable super-phosphate, *or* 200 lbs. of bone dust, 50 lbs. Peruvian guano and 1 bushel of salt, will be found an application which will pay in the returns received. The old plan of putting rye on the poorest land on the farm can scarcely be longer thought the highest wisdom.

If the rye is too rank either in fall or spring it can be grazed, without any damage, by sheep or calves. If possible seed with the drill, to insure against winter killing. About five pecks of seed to the acre is sufficient.

Buckwheat may still be sown and escape early frosts, and for a green manure up to the middle of the month will do to sow it.

Turnips may be sown at any time this month. The strap leaf, white or purple top, is the general favorite here. One pound to the acre is sufficient if sown broadcast, which is the mode generally adopted. Super-phosphate of lime seems especially suited for turnips, and about 200 lbs. to the acre will not only give them a vigorous start but carry them through the season so as to produce a good crop. It is now too late, with ordinary seasons, to sow Ruta Bagas.

Timothy Meadows.—Those of our readers who intend setting one this month should make up their minds to the most liberal treatment. Timothy is a grass which contains a large amount of inorganic materials, and to secure a respectable cutting during the time it lasts the land should be in the best condition attainable. The kind of soil timothy prefers is a clayey loam not too dry; but it will succeed on almost any land in moderate condition. Deep ploughing is an almost essential condition, and we think the benefit of subsoiling would be evident. Manure as heavily as you can, and harrow and roll, and harrow again, until the finest possible tilth is obtained. Of manures, nothing perhaps is better than barn-yard manure, if to be provided in sufficient abundance. Ashes and salt and bone are also excellent applications for the purpose in view. One peck of seed to the acre would be a proper average for most soils. Care should be used to distribute the seed evenly on the land. This is best done by dividing it and sowing it in two portions, in directions across each other. Some cover the seed with a brush harrow, but the smoothing harrow will be found well adapted to this purpose.

Late Potatoes ought to be kept clean, and the soil light. At the last working, if a mixture of salt and plaster (one bushel of each to the acre.) is sown over them it will pay for the trouble.

Root Crops.—Sugar Beets, Mangels and Ruta Bagas, ought to be frequently worked and thoroughly thinned out. A large decrease of the crop will follow from not keeping the weeds down and the earth mellow. This is true also of Carrots and Parsnips.

Making Manure and Composts. The hot sun aids very much in the fermentation of the manure piles and compost heaps, and this makes the present a good season for increasing their bulk by the collection of the odds and ends of the farm, such as weeds, road scrapings, old

sods, the waste from the house, &c. We repeat our previous recommendation to always make the active ingredient of your compost heaps good manure, as this will impart activity to all the other ingredients.

To-pDressing Grass Lands and Pastures.—Now is a good time to put on a dressing of well-rotted compost or barn-yard manure, or fine bone ashes and salt, harrowing either in. It is well at the same time to sow timothy, orchard, red top and clover seed. The advantage to be gained by this treatment will soon and long be manifest.

Fences.—Examine their condition and have any needed attention given them, that there may be no trespassing stock.

Granaries ought to be well cleaned out, and made ready for the new crops when threshed. In our June No., Mr. Atlee gave a remedy for the black weevil which so infest some barns. Tar is said to be offensive to this insect, whilst some authorities say nothing will eradicate it but fumigation with sulphur. This last is a dangerous application in barns where hay or unthreshed grain is stored.

Draining and Ditching.—The present month is a good time for attending to this very important work.

Live Stock.—*Sheep* ought to have tar and salt provided as a preventive against the fly. *Cows* ought to be well supplied with good food as the pasture becomes short. Nothing, perhaps, is better than corn fodder, if you have been provident enough to sow it. *Horses* ought to be kept in dark stables as far as practicable to protect them from insect tormentors.

The Vegetable Garden.

All spaces in the garden made vacant by crops that have matured should be filled with something like cabbage, spinach or turnips. Do not allow such ground to be taken possession of by the weeds, which will give you trouble for many seasons to come. All the litter and rubbish from the garden should be removed to the compost heap, and not be left to disfigure the garden.

Beans may still be planted for late use, but the ground must be rich, or made so.

Cucumbers for pickling should be sown at once.

Celery.—The first plantings will need earthing up, taking care not to allow the earth to get into the hearts of the plants, which will produce rust. That later planted should have when practicable liberal supplies of water.

Cabbage and Cauliflowers should be kept well worked, drawing the earth up towards them.

Lettuce for fall may be sown on rich ground.

Spinach also may be sown in drills 20 inches apart.

PARIS GREEN.—This material, which has been found the surest death to the Potato Bug and the Cotton Worm, is advertised in our pages this month by Messrs. W. Davison & Co. As it is necessary that this material should be pure to be effective, it will be well to order supplies through a house of established reputation like this.

Correspondence.

Our French Letter.

To the Editors of the American Farmer:

There is no part of the annual grant voted by the State for the improvement of agriculture that produces more immediate and practical benefit than that allocated to the holding of regional agricultural shows; and to withdraw such, or even to seriously reduce it, would be indeed regretable. Each show leaves salutary evidence of progress in those localities where it is held; stock becomes improved; implements are commended, machinery installed, better seeds are sought after, and commercial manures purchased. When succeeding exhibitions come round, fewer animals may be entered, because farmers are aware only those that are excellent can compete for the prizes, and later, when improvement has done its work, the lists will be fuller. The farmers' eyes at these shows become opened and educated, and as prejudices and routine can be only conquered by traveling to view new processes or ameliorations, those who cannot undertake a voyage benefit by the spectacle of realized progress at their doors. The farm laborer looks on also, and notes, and thinks, as well as the peasant farmer or the stay-at-home proprietor. It is not a long time ago since cattle were viewed by the French agriculturist, and indeed most live stock, as a necessary evil. In the depths of Britany improved implements are now the fashion, and since 1850 the flail then only employed has become as antiquated as a threshing machine was at the time one of the marvels of the day. Also very respectable local implement factories have sprung up, and while following in the wake of improvements, aim primarily in applying these improvements to the special wants of their district. The farmer, too, having commenced by complaining of the necessity of expending ready money, ends by recognising that what cash he loans to his lands for draining, manuring, deeper and finer tillage, &c., brings him good interest for his outlay.

Observations on Wheat, Clover, &c.

Dr. Bidard relates his observations on the growth and development of wheat. Either a very low temperature, or a frost succeeding humidity, can endanger winter wheat, by upheaving the soil and exposing the roots. At the close of February, when the leaves began to develop, he examined the stem, and found that it consisted of five tubes, one within the other, like a telescope; a month later the rudimentary ear was visible; a month afterwards, the spikelets, and even the flower, were discernable. Many farmers in France graze stock on their winter wheat in early spring, and often complain that the practice is sometimes injurious, causing the plant to run only to leaf. May this not be owing to the grazing taking place at too late a period, and when the rudimentary ear has been formed? In June, when the temperature increases, the floral organs develop rapidly; the stamens become yellow, the pistils white, and all enclosed between the tenderest of valves A temperature of 72 degrees is necessary for the process of

fecundation, which is effected in a moment; in the course of three minutes afterwards the valves of the spikelets open, reject the stamene, and then permanently reclose. When the fecundation, owing to a low temperature, does not take place, the spikelet retains not the less its round form, but yields to the pressure of the finger; it is empty, hence one of the causes of a deficient harvest. Before fecundation, no starch is perceptible in the embryo, but, immediately after that operation, the iodine test reveals the presence of starch. Ten days suffice to shape when fecundation has taken place, the membrane of the grain which ultimately forms bran; this membrane or case rapidly becomes filled with a solution of starch, and requires a good deal of water to continue its work of development; should drought ensue, this membrane is not well filled, it is thin and shrivelled—hence a second cause of a deficient harvest; to which a third may be added, the abortion of two or more grains at the base of the ear—the latter generally possessing from 21 to 27 spikelets.

Nearly all our cultivated plants seemed doomed to pass through a series of maladies. In their wild state they are not so affected, at least we do not perceive such. Is it that culture, greater well-being in the conditions of their life, leaves them more exposed to enemies; that the more we care for them the less they appear to depend on their own natural powers of resistance? The latest plant attacked with disease is clover; it sickens where it was formerly robust, or dies off in being cut at the crown, while the tap root remains healthy. This latter disease has been developed at the Grignon agricultural college; the clover fades, blackens and dies, not in patches so much as by numerous isolated plants, and, curiously, most markedly on the soil where wheat and potatoes had previously been cultivated. It is at the neck of the plant, a little above the surface of the soil, that the malady appears, resembling in the mark as if it had been gnawed by a wire worm, but produced by a parisitic mushroom, which, as it grows, alters the cells and their contents. When a dead plant is placed in a moist position for a day or a night, it becomes covered with down—the same fungi that attacked it when living, and which is believed to be identical with that found on the leaves of a diseased potato plant.

French Horses—Guano, &c.

The new law on military organization naturally affected the supply of horses in France, and the Assembly has been but consequent in voting funds to increase not only that supply, but the improvement of the breed. From January next the State will purchase every year 200 stallions of good blood, to be disseminated over the country, and subjected to inspection. It has re-opened some of the closed breeding establishments, placing all under a special commission and the law, instead of the caprice of a minister. The army needs at present 90, instead of 70 thousand horses in time of peace; in case of war, 260,000 would be required, the moiety on the moment.

Experiments are being undertaken to test the efficacy of highly nitrogenized manures as a means of combating the vine disease—phylloxera. Peruvian guano is the manure most in request, chiefly because hitherto it has not been employed. Apropos of guano, a French tribunal has ruled, that an authorized agent of Peruvian guano is quite right to refuse to sell the manure to persons whom he reasonably believes intend to re-vend it in an adulterated form.

From the researches of Schulze, there is a certain relation between the richness of a soil in mineral matters and the trees it produces. In the case of pines and larch it has been found, that the poorer the soil in phosphoric acid, the more inferior will be the yield of timber. As a rule in general, the greater the quantity of potash and lime in a soil the more vigorous will be the trees. The removal of the leaves from forest soils is also a serious source of exhaustion. In the sugar factories it is the practice to mix quick lime with the *debris* that comes from the pressing machines; the value of the compost has been found to be more commercially valuable, and of course for manuring purposes on which prices are based, by substituting gypsum for quick lime.

It has been observed that when calves suckle their mothers the latter experience a great desire to drink, although having drank but a few minutes previously. Is it that she fears her offspring would be left without a supply of nourishment and takes precautions? It has also been remarked that whether milked in the field or in the shed, cows display a desire to drink, though having just drank. Experiments are promised as to watering cows only during process of milking to ascertain if the practice affects the secretion of milk.

Artificial Milk for Calves.

M. Lejeune, director of the agricultural establishment of Gembloux, in Belgium, which is supported by the State, has confirmed his success in the rearing and fattening of calves on artificial milk, formed by the addition of wheaten flour, malt, and carbonate of potash, to skimmed milk. Wheaten flour must not be depended upon as a source of aliment with milk. In the Black Forest, Liebeg has shown that such mixture increased the mortality of infants by 42 per cent., producing indigestions, &c. In the case of young stock, hay-tea, eggs, bread, oil cake, &c., made up in a mash, are open to serious objections. At the Gembloux farm the milk is skimmed, and the cream made into butter as a rule. But many calves and young hogs are reared, demanding artificial milk as a necessity. For three weeks the young calves receive eight quarts of pure milk daily; this quantity is then gradually diminished, and the artificial preparation proportionately succeeds. The artificial milk consists of 1¼ ounce of wheaten flour, the same of powdered malt, and nearly two pennyweights of carbonate of soda, per quart of skimmed milk; the mixture is cooked by a jet of steam, keeping the mixture well stirred. Over an ordinary fire the cooking is troublesome, and burns. In summer the mass keeps fresh for 24 hours and ought to be given cold. The bicarbonate of potash prevents the acid reaction of the flour, besides, the potash is required for the blood, and carbonate of soda cannot replace it. The starch of the flour by cooking is converted into sugar and dextrine, which, if transferred to the animal's stomach, would prove a very fatiguing operation. The artificial milk costs a fraction more

than one sous per quart, while the unskimmed milk can be sold at three sous per quart.

M. Collodon has instituted several experiments on trees as lightning conductors, and finds that the poplar is the best, as it ever escapes, while the top of the oak, or the branches of the elm, generally suffer. In planting poplars, therefore, around a building, they may be considered as efficacious conductors of lightning, but it is necessary to connect the lower part of the trunk with a well, or a moist soil, by means of a metal rod. F. C.

Paris, June 13th, 1874.

Gunpowder (Balt. Co.) Agricultural Club.

To the Editors of the American Farmer:

The last meeting of the Gunpowder Agricultural Club was held June 27th, at the residence of T. T. Gorsuch,—S. M. Price, foreman. At the previous meeting an order had been passed requiring the members to assemble on the day above named in the field selected by the fetilizer committee for their experiments on the farm of Jos. Bosley. A thunder storm, which prevailed at the hour appointed, rendered the execution of the order impracticable. The examination on our host's farm consisted in the comparison of the effects of various fertilizers on the ripening grain. On rye a test between Whitelock's Vegetator and bone left a mark plainly in favor of the former, though on wheat the vegetator showed no perceptible advantage over our host's own manipulation of bone, dissolved, Peruvian guano and Kainit. The prize acre was likewise inspected, and exhibited a promising state of health and vigor.

After a refreshing and bountiful supper the club proceeded to business, which included the ceremony of presenting a photographic picture of the members, awarded to our host for his success in raising last year the largest yield of corn on one acre. Our foreman made the presentation in a neat, appropriate and graceful address. Among other things, he said, "when this club was organized no one thought that 25 barrels of corn per acre could be raised here. This no doubt has been brought about by our organization. He thought it not assuming too much to say that not only members of the club had received much benefit from our gathering, but that other farmers throughout our section are waking up to the necessity of greater improvement. As the members are represented in th s picture standing shoulder to shoulder, he hoped it would ever be while life lasted that they so stand in each other's interest and in the advancement of agriculture, the noblest of occupations." Our host replied at length. "He believed the hills of the Gunpowder and the bottoms of the Western Run capable of still larger yields than those which had been reached. He would not feel like laying claim to credit till he had obtained a product of *thirty* barrels. He thought these friendly contests and the beneficial information thereby brought out, was leading to a higher general average in corn, which he believed would in a few years be carried still higher." The picture was executed in fine style, and in such perfection that it could be taken for a steel engraving. The position of honor and prominence is accorded, of course, to the venerable recipient, whose flowing beard of snowy whiteness lends him a patriarchal aspect. He has on his right, Samuel Sands, Esq., senior editor of the *American Farmer*, and on his left the venerable Thos. C. Bosley, Esq., both his equals in age, though it is evident Mr. Sands bears his years lightly. The remaining members of the club, active and honorary, are grouped above and around these central figures. The picture is of large proportions, and as it pended from the wall of our host's parlor, was the cynosure of all eyes.

The club discussed the following topic: Is it profitable to raise sheep in our locality? What are the best breeds? What is the best way to take care of and protect them?

Jos. Bosley had not found sheep especially profitable. Thought there was less loss and more profit in frequent changing. Sheep are pretty close feeders, but he could not assert that they injure the land more than other stock which does not feed quite so close. He thought thirty sheep and their lambs, plentifully littered, would make as much manure as ten horses. Mr. B. spoke of no losses from dogs.

T. T. Gorsuch had had no experience with sheep for a number of years. If he had occasion to change from the dairy business, he would make a specialty of raising and feeding sheep. The value to the land from keeping them would be 100 per cent. greater than from dairying, though the immediate profit in wool and meat would be less. For lambs and wool he would prefer a cross of Merino and Cotswold. As to protection, our dog law being utterly inefficient, he would consider a high enclosure the only safeguard. Bells, however, will keep dogs off. (S. M. Price's experience was different; he had had belled sheep killed.)

Josh. M. Gorsuch had not found sheep profitable. On small farms they are an incumbrance. Those who have large and foul farms can keep them to profit. He did not favor frequent changing; he had tried it to his loss. Sheltering in stone stables he had found hurtful to lambs.

A. C. Scott.—With him dairying had supplanted sheep raising; had found the two incompatible. He considered sheep profitable. Merino and Cotswold give finest, hardiest and most easily fattened lambs; has sold them to weigh ten pounds to the quarter at ten weeks old. Housing is the only protection from dogs.

Edward Scott.—Experience with sheep limited, but as far as it goes is on the side of profit. Has kept a few with a view to spring marketing; pays if well attended to. There is nothing better for the improvement of the land than sheep raising. For breed would prefer Merino and Cotswold. The only plan to secure protection against dogs, is to send such men to the Legislature as are not afraid to pass stringent dog laws.

D. Gorsuch thinks sheep raising and fattening can be made profitable, but not in connection with the dairy business. Doesn't see why sheep can't be raised here with profit. We are close to a good market. Lambs if gotten into market early are valuable; fleeces, too, are worth a good deal. We labor under a disadvantage in not keeping the right breed for mutton. He had attended market here for many years, but had seen no such mutton as he had seen in the Liver-

pool markets. The best breed in England had come from a cross of South and Shropshiredown. Here Mr. G. was interrupted with the statement that the profit of sheep raising in England did not arrive from the meat and wool, but from the manure which the sheep produced. This accounted also for the apparent paradox that turnip culture is conducive to fertility, as they were fed and left their manure on the turnip ground. Mr. G. thought sheep could be best protected by taxing dogs heavily. Sheep need a dry, roomy shelter.

John D. Matthews had kept sheep twenty-eight years to raise lambs for market. On account of the loss from dogs, he had been compelled to bring them into his lawn at night, and bell them to alarm the family in case of danger. This deprived him of the droppings where most needed. Thinks the close grazing of sheep in spring injurious; the grass hardly recovers from it the whole season. He considered sheep unprofitable to him. Breeds.—Southdown runs too much to fat; crossing with Cotswold remedies this.

N. R. Miles argued for the profit of sheep raising from observation, not from experience. He thought hurdles or movable pens, such as are used abroad for confining sheep at night, would answer the double purpose of protecting from dogs and concentrating the profit arising from their manure.

S. M. Price favored keeping sheep. No stock enriches land like sheep. Last fall had a field nicely manured by sheep. At night they rest on the highest knolls, and these soon become the richest spots. Mr. P. farther showed by figures that there is a direct cash profit from fattening. Breed.—Merino, too wild. Liked the Long Wools the best, and butchers preferred their lambs. To protect from dogs would confine in a lot near the house, and bell to give alarm if disturbed.

Among the guests present were Henry Carroll, Sr., of My Lady's Manor, and his son, Henry Carroll, Jr. The state of Mr. Carroll, Sr.'s, health made it imperative for him to avoid the night air, and as the discussion was not begun until about nightfall, the club was thus deprived of his ideas and suggestions on the subject. He has had large and extended experience in it, though of late, like hundreds of others, he has been forced to surrender to the dogs. The hope of effective deliverance from this curse, through legislative action, appears little short of vain. Unfortunately governing with us has degenerated from a science into a trade, and more unfortunately still the agriculturist seems to look upon his calling merely as a make-shift till some less laborious opportunity of existing offers. The fault is after all the farmer's own. This view of the dog-sheep question is recommended to *Legio Octima*. When the coming farmer shall have been taught the interest, nobility and grandeur of his calling, and taught to love it, not alone for the yearly cash balance, but more for the immunities of health, happiness, clear conscience and competency it may afford, he will become conscious of his value and importance as the chief factor of civilization, and as a dispenser of favor can insist upon respect for his rights. The dog-sheep problem will then be found easy of solution.

T. G.

Baltimore County, July 11th, 1874.

[The committee to whom was referred the letter of Messrs. Whitelock & Co., suggesting a test of commercial fertilizers, manufactured or sold in Baltimore, reported through their chairman, J. D. Matthews, that they had visited and presented the letter, personally or to their representatives, to twenty-five firms, when the following accepted the conditions and agreed to participate in the test, viz: L. Sangston, for Maryland Phosphate Co.; P. S. Chappel, Jno. C. Hachtel & Co., P. Zell & Sons, making with the originators of the proposition, five—one short of the required number. The other parties waited on, either declined or failed to respond within the time assigned for reflection.]

Protecting Fruit Trees against Frost—Ice Houses, &c.

Editors American Farmer:

As L. W. G. and Mr. Fitz are fruit growers, and had a good deal to say last spring about *mulching, deep planting, &c.*, I propose (though I don't profess to be a fruit raiser) to tell them something they don't know, or, at any rate, which *I don't think they know.*

Last spring, one cold evening when I knew there would be frost, I thought I would try an experiment on a peach tree growing in my garden. I accordingly took a new hemp rope, 25 or 30 feet long, and stretched it over the tree as high up as I could get it, and placed two dinner plates filled with water under the tree, so that one end of the rope hung in one plate and the other end in the other plate.

The consequences were that while the frost killed nearly every peach on this farm, the above tree is loaded with fruit so as to break the limbs.

Now will you, L. W. G., Mr. Fitz, or some one else, give me the philosophy why the fruit was not killed.

I saw the receipt in an Almanac in 1844, but I never tried it before, and you may tell your readers that it paid me for my trouble.

But I must stop and go back to the March No. of the *Farmer* about my ice-house, which I wrote to the *Farmer* over the signature of "Tar Heel." Well, I could get no ice last winter thicker than ¼ of an inch, and I gathered 20 or 30 wagon loads and pounded it into my house with a maul, and put in sawdust. I had good drainage, but no ventilation, and my ice was gone the 1st of June. I would like to get some information, and I also wish some farmer would give us a chapter (in the *American Farmer*) on hedging, the best sort, the best seed, &c., &c.

We ought to work for each other's good, and if A or B can give C some good advice or tell him something he don't know, I think they ought to do it.

So, Mr. Editor, if my letter is not too dry, please publish it in the *Farmer*.

Our cotton is good, our corn poor; the drought burnt us up.

JOHN W. KING.

Cumberland Co., N. C.

[Perhaps if our correspondent's peach tree had stood with the others, and not in his garden, it might have shared their fate!—*Ed. A. F.*]

Trials of Kainit.

Editors American Farmer:

You solicit in your July No. the experience of your readers with "Salts of Potash." I used a ton of "Kainit," in various ways, and upon various crops, last spring. Upon corn in the following manner: After covering with cultivator, applied "Kainit" as a top-dressing on rows, 200 lbs. per acre. Result—Better-looking corn, at this time, by 25 per cent., than I expected. On Mangel Wurtzels: drew a shallow furrow—drilled Kainit in same, at rate of 300 lbs. per acre; turned light furrow on from each side; leveled off top, and drilled in seed. Result—Not so favorable as with corn. Applied it to Early Cabbages in the hill, about three tablespoonsfull to a hill. Result—No cut worms; no cabbages!! (burnt up.) On Tomatoes in smaller quantity to the hill than in cabbages; plants look equally as well as where I did not apply it.

Applied it as a top-dressing to young Peach trees, some of which were not thoroughly dry, as considerable rain had fallen a few hours previously. Result—Rate of 200 lbs. per acre, burnt up all the wet Peach seedlings it came in contact with, and has retarded growth of the others in same rows at least one month.

Tried it on Asparagus in nursery rows, at the rate of 300 lbs. per acre. Result, quite satisfactory. Have applied to late potatoes, but cannot give results yet.

After summing up results, am rather favorably impressed with the Kainit, for, as will be observed, it did not have a fair trial, in the mode of applying, in all the cases when I experimented with it. Very truly yours,

J. W. KERR.

Caroline Co., Md., July 10th, 1874.

The Dairy.

Dairy Farming near Baltimore.

If distance from market adds to the troubles and diminishes the profits of the farmers, proximity to large cities is attended with no less inconveniences and trials. First and greatest amongst these is the scarcity, uncertainty and inferiority of labor, which, added to the high value of lands, makes the production of ordinary farm crops almost an impossibility save at a cost which will more than equal their market price. This cause has led to the adoption on lands near towns and cities of various specialties in culture, which, suffering nothing in competition of the staples produced from the great grain fields of the West, afford better rewards for the hire of land and the labor of the farmers. Hence, market gardening, grass farms, milk and butter dairies, small and large fruits, &c., to some one or other of which it would seem necessary that the owners of farms convenient to large markets should now turn their attention, as giving some better opportunities of escaping conflict with the corn and wheat of the Western prairies.

The vicinity of Pikesville, in Baltimore Co., near this city, is largely occupied by farmers engaged in milk dairying. We spent a portion of an afternoon last month on one of the places near there, and as an illustration of a farm which is professedly "run to make money," some notes of what we saw may be not uninteresting. The farm is of about 200 acres. There are from 40 to 50 cows constantly milking, and the *daily* quantity of milk sent to the city varies very little the year through from 100 gallons. Most of the cows are native stock, or grades of some of the improved breeds, though we noticed several representatives of pure bred stock, among them a very fine Ayrshire; another, a Holstein, about the only thorough-bred animal of this race we know of in this vicinity save those of Mr. S. M. Shoemaker, who has, as we believe, a herd of them. Hitherto, until the present season, no calves have been raised on this farm, but now a fine Ayrshire bull from the herd of Mr. Birnie, of Springfield, Mass., is kept with the cows, and the calves of the best milkers are preserved.

The soiling system is practiced here exclusively, save that the second crop of clover is occasionally pastured. The main crops relied upon are rye, clover, oats, and fodder corn, the last either sown broadcast or in drills, but forming in either way the main dependence both for feeding green and for curing for winter. The cows are kept in a lot where their feed is given them, and they are fed morning and evening after milking in the stables a moderate supply of mill stuff and corn-meal.

In winter all the feed is cut, mixed with mill stuff and steamed. The diet is varied as much as possible, and when obtainable, a small daily amount of brewer's grains is given to each cow, nothing having been found more conducive to flow of milk nor so helpful in maintaing the health of the cows, differing in this last respect very pointedly from distillery slop, against which from time to time such vigorous and deserved protests are raised by the inhabitants of cities, who suffer from its use.

A small and compact but powerful steam engine is employed in cutting the feed, pumping water, &c., while the boiler gives a sufficient supply of steam for cooking the feed. As soon as the milk is drawn from the cows it is placed in deep cans, which are at once sunk in a cooling tank, and, the temperature of the water in this tank never rising above 54°, it is quickly deprived of its animal heat, when it is turned at once into the ordinary cans for shipment to the city. The

cooling of the milk is assisted by occasional stirrings.

The milk is sent to the city, a distance of some 9 miles by railroad, this plan being found more convenient and expeditious than sending by wagon, as well as saving the labor of one hand. Shipments are made daily, night and morning, and the produce of this farm is so well known for its purity and especially its *constancy* of quality that it is eagerly sought by the retail dealers. At present, however, it all goes into the hands of one person. The price obtained was, for the past year, 25 cents a gallon for eight, and 20 cents a gallon for four months.

Besides the crops for the maintenance of the cows, there are grown on this farm good crops of rye, both grain and straw of which are sold, and of timothy hay. Roots are grown to some extent, but, except beets, are not highly esteemed, in which we confess to some surprise. Flat turnips are, however, annually raised, and appreciated as giving a supply of succulent food at a season when greatly needed. The main stand-by is Corn fodder, summer and winter, supplemented of course during the latter season by clover hay, and always by good rations of mill stuff and meal, as noted above. The great object is to get the cows to eat as much as possible, and the general health of the herd may be known from the fact that in four years but two animals have died, and they rather from local or accidental causes than systemic disease.

A moderate patch of *millet* (the cat-tail) is grown here, and an experiment is being made with an East India plant, called *durhh*, very much resembling corn in its appearance, but which admits of two cuttings in the same season. This is also the case with the cat-tail millet, which grows to the height of 8 or 10 feet. We hope to learn something more of these two crops, in which case, of course we will give our readers the benefit of our information.

We may be perhaps going too far in giving to the public a statement of the proceeds of this farm, but, as an illustration of what can be done in the management of a farm under the disadvantages of being near a great city, we will say that year before last—the farm year ending June 30—the milk crop sold for, in gross figures, about $7,900; of the hay and other crops there was sold in addition about $1,700, making a total of $9,600, from which was deducted $3,600 for feed bought, and ordinary expenses, leaving a return of $6,000, from which there is still to be deducted the cost of the *labor* on the farm, the figures for which we did not receive. The owner of the farm does not reside upon it, except during the summer months, but by the terms of agreement, which seems a fair one for such a case, his manager furnishes the labor against the land, and all other expenses are divided equally between them, as also are the profits. From the number of animals kept the manure annually made is very great, and the fertility of the fields may be judged from the fact that three tons of clover hay was this season cut to the acre.

How to make Gilt edged Butter.—At the recent exhibition of the Chester Co. Agr. Society, Pa., Isaac Acker received the first prize on butter. His mode of making is stated as follows: He feeds ten quarts of corn meal and bran to every cow per day, with hay. The temperature of the cream at churning is 57 deg., and churns from 12 to 20 minutes; 6 ozs. of salt and 3 ozs. of white sugar to 20 lbs. of butter; uses an Embree butter-worker, with a sponge and cloth, and does not wash the butter with water. Acker believes that the essentials to make the dairy business pay are good cows, well-fed, well taken care of, convenient dairy houses and appliances; then a good article is produced and sells at a high price. Last year his cows averaged 230 lbs. each.

Live Stock.

Profits of Sheep Raising.

In a letter before us from Gen. Cheatham, in the *Rural Sun* of Nashville, Tennessee, we find his statement of the profits of sheep raising. In the Spring of 1866 he purchased a buck and eleven ewes (good sheep, common breed.) The clip of wool for the first three years was used at home; afterwards, to date, he sold of sheep and wool to the amount of $1,017, and has on hand 75 ewes and 100 lambs, worth $200, making a total of $1,517 on the original investment of $24, besides the amount of mutton and wool for home consumption. The number used for the table he could not tell, but he remarks that his family are mutton eaters, and the table has been well supplied every summer. Gen. C. has the usual complaint of losses by dogs, ten or fifteen lambs being killed by them every spring. This year, he says, he lost 30 lambs, 20 of which he knows were killed by two hound pups belonging to his next neighbor. Except for a few days of excessive cold weather in winter, when the ground is covered with snow, when he gives them a few sheaves of oats, the sheep have been raised entirely on grass, winter and summer.

There is no branch of farming, considering the labor and capital bestowed, more pleasant and profitable than sheep raising; and yet the cry from every quarter of the country is, that the drawback to success is caused by the destruction of the flocks by worthless, half-starved dogs, whose owners, in most cases, being unable to feed them, they are necessitated to prowl about among their neighbors to feed upon their sheep and poultry. The proceedings of the Gunpowder Club, on another page, show the sentiments of the best class of farmers on this subject. They have peculiar cause of complaint, for their appli-

cation to the last Legislature, as was that of the State Society, for legislation upon this, as well as upon other subjects of importance to the tax-payers of the county, was treated with contempt by some of their own delegation, who appeared to obtain control of the committee on agriculture, and defeated nearly every measure prayed for by the farmers of their own and other counties—and they are now exhorting these same farmers to send them to a higher legislative body.

THE HEREFORDS.—In their native shire of England, where great care has been taken in the raising of this breed of cattle they have been enabled to make some show with the short-horns as beef producers—but generally, the latter, both in England and America, has far outstripped all others in the race, so that for the especial purpose alluded to, none others can now attract but a most limited attention. Now and then, however, we find mention made of a herd which is well spoken of, and one of these is given in a late number of the *New England Farmer*, belonging to H. C. Burleigh, of Maine. The *Pa. Practical Farmer*, in noticing the almost isolated case, remarks that:

"We have always had a very poor opinion of Herefords, considering them—to use a common expression—neither "one thing nor the other, neither fish, flesh nor fowl." As beef cattle, in neatness of form and feeding value, they rank far behind the Short-Horns; and as milch cows they are surpassed by several other breeds, being coarse, heavy boned animals, not coming up to the standard in anything, except, perhaps, heavy proportions of bone for the phosphate factory."

The *N. E. Farmer*, however, gives the following glowing description of Mr. Burleigh's herd:

"Mr. Burleigh's Herefords, taken as a whole, are the handsomest herd of beef animals, of the number, we have ever seen together. The patriarch of the herd, a five year old bull, girting eight feet, lacking one inch, although kept entirely on good hay, without grain, was as fine a looking lump of beef as we ever saw, and was pronounced by the company the handsomest bull within their knowledge. A pair of giants, in the shape of working oxen, showed by their pranks and capers that they were able to either work or play according as the opportunity afforded. The number of cows and young stock was not large, Mr. Burleigh having sold all the increase of the herd for the past year. The calves are allowed to suck all the milk they want, till they are about five months old, when they are gradually weaned. We believe Mr. Burleigh has the youngest cow we ever saw with a yearling heifer by her side,—a healthy looking cow of good size, that brought her first calf when she was at the advanced age of fourteen months and sixteen days. She is to come in again at about two years old. Mr. Burleigh advocates breeding in and in, as he understands it, and showed some very healthy, well-formed animals, the result of such breeding."

Spanish Merino Sheep.

Messrs. Editors of the American Farmer:

The introduction of pure-bred rams will annually increase the fleece of a Maryland flock one half pound per fleece! Could your farmers be induced to reflect on the importance of this increase, then I have not written this in vain. I care not where they purchase their rams, so that they get them from a good flock. One to three rams annually do not cost much money, and yet an increase annually of one-half pound each becomes an important item. Assume a flock now averages some 2½ lbs., then increase these weights ½ lb. annually, and in seven years you have an average of 6 lbs. per fleece. We now allude to washed wool only. If you include a few Spanish Merino ewes from the same flock, the entire average in that time could be made still more, and to this add the increased value of the flock, and you have an item worth your attention. The time is coming when Maryland will contain more and better flocks; when less grain and tobacco will be planted; when a beautiful green sward will adorn many a now worn-out field. This change will take place. You are enterprising and have taste for the beautiful; you are as anxious for gain as people elsewhere; plow fewer acres and grow more sheep and wool, and thus grow more grain. Gentlemen, I would you had seen the shocks of wheat standing on about 8 acres of my farm—642 dozen of large sheaves—and owing to the badly tangled and down condition of the straw, the machine was compelled to run over and waste very much, and yet all this grew on land once thought not worth farming. I admit, less fertility would have given a better produce, yet heavier farming and fewer sheep would remedy that. However, we make the Merinos our object. This fertility follows with other gains, and I think we shall continue. This process is not covered by letters patent; the same way is open to others; neither shall I contend for a selfish monoply; this earth is large, with room for all of us. We have a short time to stay here, and if we do some good, our time will not have been spent in vain. We live in a progressive age and feel bound to keep on the track. A few Spanish Merino sheep well cared for will soon cause your family to take a lively interest therein. JOHN S. GOE.

Brownsville, Pa., July, 1874.

A PRECOCIOUS HEIFER.—Mr. Wm. R. Warren, one of the most substantial and intelligent farmers, living near Madison, Wisconsin, gives us a remarkable case of a heifer in his possession. She is two years old this spring, and he began to notice in the fore part of May that she was "making a bag," and feared that the swelling was the effect of a hurt, but thought he would milk her. Ever since the 15th of May the heifer has been giving a fine mess of good, rich milk, and she seems to be a veritable milch cow, to all intents and purposes, without ever giving birth to a calf, or exhibiting any signs of bovine maternity. Can any of our learned cattle breeders give an explanation of this remarkable freak?—*Wisconsin State Journal, June* 30.

Horticulture.

A Day Around Baltimore.

Taking advantage of the visit of *Mr. Meehan* of the *Gardener's Monthly*, we were glad to have an opportunity of showing him some of the improvements made around our city since his last visit, and to take him to a few of the places of interest in its vicinity. Some notes of what engaged our attention may not be without some attraction to our readers.

Messrs. Meehan, Brackenridge, Pentland, and the junior of the *Farmer* made up the party, and the way the first two cracked of *genera* and *species*, and what was found in New South Wales, or New Zealand, or among the Rocky Mountains, or in Deseret, was amazing to others who have staid at home among the roses, or busied with the hoe, knowing nothing of the delights of discovering new species or finding old friends in strange quarters, botanically.

Stopping first at Mr. Pentland's, we looked through his houses, inspected the novelties, and wondered where in Baltimore he would find purchasers for the almost numberless roses, of which he makes a specialty. In one of the greenhouses, we saw in fine bloom, a Clereodendron Balfouri, which was acknowledged by all to be the finest specimen of the kind they had ever seen. In the open air are some rare evergreens. A conspicuous plant is a Mahonia japonica, 5 to 6 feet high, bearing fruit. This establishment is favorably situated for the sale of ornamental plants and trees.

Giving a hasty glance at Greenmount, Baltimore's "city of the dead," we hurried on to the estate of the late Johns Hopkins, which, by his munificence, is donated as the seat of the University bearing his name, which will be one of the most liberally-endowed institutions of learning in the country, and which, in the design of its founder, is to include a botanical garden and a school of agriculture and horticulture.

Considerable advance has been made in the work of preparation for the purposes to which this place is to be dedicated, such as the laying of drains, and the filling up of the lake, for which there has always been an insufficient supply of water; but nothing has been done, so far as we are informed, towards the selection of the plans or site for the buildings.

During the long period that Mr. Hopkins owned this property, he had planted a large number of noble native and foreign trees, and probably nowhere south of Philadelphia is there so large a collection of well-grown specimens; but there seems to have been little system in their selection or arrangement. With the unlimited means at his command, it is matter of regret that, with his intentions concerning the disposition of this property, the grounds should not already have been prepared for the purposes in view, since a period long beyond that necessary for the erection of buildings, &c., will be required to produce such an effect by new plantings, as might long ago have been attained.

Extensive groups of various varieties of Magnolias are a marked feature in this fine old place, including many trees of M. Grandiflora, from 20 to 30 feet high, adorned with their large fragrant white blossoms. Fine specimens also of the *Belis Jaculifolia*, or lance-leaved pine of China, ranging from 10 to 20 feet, appeared to be numerous and in good health, and conspicuous on the lawn was a tree about 25 feet high, of the elegant *Picea Pinsapo*. We were also forcibly struck by the dense, stately American Arbor Vitæs, whose vigor may be owing to the selection of the varieties, though we are inclined to attribute their fine appearance more to the suitable character of the soil for this tribe.

Mr. William Fowler, who has had charge of this place for about eighteen years, we found busy among the green-house plants. These include several notably large specimens of Double White Camellias, a large Chamærops from Japan—this Palm bearing a striking resemblance to our own Southern Palmetto—and, as a mate to it, a *Musa Ensete*, a Banana from Abyssinia.

The vines in the extensive range of cold graperies promised a rich supply, while outside were crops of figs and pears.

Passing the handsome estate of Mr. John W. Garrett, which possesses capabilities of development unequalled perhaps by any around Baltimore, we soon arrived at "Hampton," the seat of the Ridgelys, one of the oldest, and now, we suppose, best-kept places in Maryland. Under the tasteful direction of Mrs. Chas .Ridgely, considerable improvements have been effected by the opening of new vistas, the extension of the lawn, and the remodeling of the flower gardens.

The gardening is mixed, combining features of the old English and Italian styles, with elevated terraces, formal parterres, geometrical flower beds, &c. The mansion, modeled after some fine specimen of an English manor-house, divided by a hall of magnificent proportions, filled with handsome paintings, statues and articles of *vertu*, occupies a commanding position, and is reached by an approach through a finely-wooded park.

The glass-houses are extensive and complete; the most ancient, the Orangery, being about to give way to an enlarged and more modern structure. The Grapery showed by its fine crop of fruit the good management it was receiving at the hands of Mr. Mark Taylor, who for several years has been the gardener here, and had charge of the improvements.

One of the features of this place is the family cemetery, containing a massive mausoleum, which receives the remains of the dead of the immediate family, and the graves of members of collateral branches. The entire surface of the ground is covered with Vinca, and the walls are mantled with an almost unbroken covering of Ivy, the effect produced being somewhat sombre, but as peculiar as appropriate.

Leaving Hampton we drove to the "Rosebank Nurseries" of Mr. Brackenridge at Govanstown. This gentleman is so well known to our readers by his contributions to our pages, that they doubtless would be pleased to know all about his establishment, and we regret our space forbids our now giving as full an account as we could wish of the gathered riches there in trees, shrubs and flowers.

Conspicuous on the front is a beautifully kept hedge of the Pyrus japonica, which in spring shows, in its floral glory, like a wall of flame, whilst almost overhanging it is a magnificent specimen of the Deodar cedar, the most perfect one to be seen near here.

Here we found a large and varied collection of ornamental trees and shrubs. Among the Evergreens we noted many kinds of European Hollies by the hundred, of various sizes; Globe, Golden and Pyramidal Arborvitæs, suitable for ornamental purposes. We also saw as many as a half dozen kinds of Retinosporas from Japan; and from the same country, a singular Evergreen tree, *Sciadopitys Verticillata*, together with *Stachyurus præcox* and *Hovenia dulcis*. Close by these grew the *Diospyrus Kaki*, or big-fruited Persimmon of Japan, with seven or eight fine cut-leaved Maples of the same country. The long-spurred, yellow-flowered Columbine, *Aquilegia chrysantha*, bloomed freely in the border, with many other attractive herbaceous and tender plants, whilst most to be admired, perhaps, was the large stock of finely-grown Pear trees, for which Mr. Brackenridge is so celebrated.

We next visited the seat of Mr. Wm. T. Walters. We have had occasion heretofore to speak of this place, which is comparatively a new one. Thanks, however, to the exquisite taste of the owner, and to the skill he has called in to carry out his improvements, Mr. W., who is conspicuous for his love of art in every form of development, has made a transformation, which, in its completeness, is almost magical. Handsome lawns, shady groves, and a delightful pleasure ground, embedding a pretty lake and decorated by a well-kept flower garden, now occupy the place of scrubby woodlands and of a marsh, a few years ago almost impassable.

In the conservatory is a superb specimen of the graceful South Sea fern, *Cythea Medullaris*, which is set off at the other end of the house by a luxuriant plant of the *Cereus Hookerii*, the fragrant white flowers of which, about a foot in length, are produced only at night. In this house the collections of Begonias and Ferns were well grown, numerous and varied in kinds. In the grapery there is promise this season of having bunches even larger than those of eight pounds produced last year by Mr. Alexander Fraser, who is the gardener in charge.

On the lawn near the house are some fine specimens of rare trees. Noteworthy among these is a *Juniperus oblonga pendula*, or Weeping Juniper, ten feet high, of which our friend Meehan remarked that it not only occupied exactly the right position, but that it was the finest specimen he had ever seen. Near by stand some specimens of the graceful Kilmarnock Willows, Siberian Stone pines and the Maiden Hair tree, as well as stately Irish Yews, Hollies and Magnolias.

Space forbids further allusion to the skillful planting here shown, and we content ourselves with saying that on this place our eye failed to discover a single solecism. Everything is in keeping, and no incongruous absurdity glares up to mar the harmony of the whole.

Orchards, Cultivated and Otherwise.

The editor of the *Gardener's Monthly* thus discourses on this topic: "One of the old and long cherished theories of fruit culturists is, that trees will not do well without a constantly clean surface. It is conceded that trees will not thrive when the temperature of the earth is much above 70 degrees. At 80 degrees the system of the tree becomes weak, and renders the leaves susceptible to the attacks of various fungi and other diseases. And yet the experimentor will find in this region, at least, that soil unprotected on the surface from the sun's rays will go over 90 or 100 degrees. It is very likely after this he will get tired of seeing the leaves of his pear trees fall off before midsummer has hardly gone, and go to protecting the surface in some way, yet believing, probably, that in "theory" at least the exposed, clean, sun-roasted surface is the proper way, and the only right way, to grow fruit trees.

He may live in a region where year after year seedling pears drop their leaves so early in the season that it is impossible to bud them; and he may have to abandon the business to Northern men who can "grow pears." He may take a dozen or so of young seedlings and pack them thoroughly through and about with brushwood, so that it is almost a struggle for the plant to push its way through. He will find the leaves young and healthy to the last, while those in the clear, clean soil will long have lost theirs; and on testing land under the crust with a thermometer, will find it about twenty degrees lower than in the other case. He may think after this that it will pay him to keep his soil cold in some way, though he still may not dare to dispute the theories of those who hold that a clear, clean surface is the beginning and end of all good culture.

This is the season of the year to think of these things. Let every one take his thermometer and try the difference between the shaded ground and the cleared ground, and the difference in health of trees in connection with the earth's temperature, and he will be surprised how much he will learn. He may, perhaps, be laughed at as a "scientist" by some good, easy-going folks; but he can lay the whole blame of his folly on the *Gardener's Monthly*, who will cheerfully bear the ridicule for its dear readers' sake."

Notes Among the Vegetables.

Editors American Farmer:

We have now arrived at the time of year when we may begin to sum up our notes for use next year. Every horticulturist knows how necessary it is to keep a long look ahead, thus preventing the occurrence of the mistakes another season which have happened the present.

Of course, in your eminently practical periodical, we can only take a few notes from a page in our general routine work.

The season was not at all propitious for early subjects, much unnecessary complaining being the order of the day; but the past spring only tends to confirm the opinion formed by years of previous experience, that it takes a much severer frost to injure an unexpanded fruit bloom than many suppose, and, although we had from four to six inches of snow on the 29th of April, followed by a severe frost on the morning of the 30th, the blossoms which had not opened were uninjured.

From necessity, and not choice, we reversed the order of things in sowing our peas, putting in the late ones first. Thus we sowed Saxton's Prolific and Champion of England on the 10th of March, Daniel O'Rourke on the 20th, and Saxton's Alpha on the 13th April, the latter being a comparatively new variety. The first blossom came on Daniel O'Rourke on the 26th of May, followed by Saxton's Alpha and Prolific two days later. Gathered peas of Saxton's Alpha on the 13th June, four days earlier than Daniel O'Rourke, although sowed three weeks later than that variety. We have a note against Alpha as "a first-class early, for further trial." We shall still grow a few Daniel O'Rourke, out of respect for "Auld Lang Syne," out of pure "cussedness," some one suggests.

We were so well satisfied with Canada Victor as an early *tomato* last season, that we tried it again this, and we still consider it the best early tomato we have ever tried; it is of good shape generally and ripens well all over. The first fruit ripened on the 3d July, but could not pick a dish of them until the 11th. They are, however, ripening up well now. No other variety that we have shows any sign of ripening at present, July 17th. N. F. F.

[By way of experiment, we tried sowing peas on the following days, with result as noted: sowed Extra Early Philadelphia on Thanksgiving Day (Nov. 27th;) on Washington's Birthday (February 22d,) and on April 10th. Peas were picked from first sowing, June 7th, while the two other sowings were only four or five days later. The first and second sowings were protected by a covering of trashy manure, and a little brush also was put over the first. The variety was chosen, not for quality, but as being conveniently at hand, and a hardy sort. We believe in a moderate winter; with some protection, in the latitude of Baltimore, fall sowing of peas may be practiced with advantage as to early cropping.—*Ed. A. F.*]

Dried Fruits and Vegetables.

The value of a machine for drying fruits and vegetables, upon some such principle as that so successfully introduced in the Alden patent, must be apparent to every one who will give the matter a thought. We announced in our list, that the Ryder Drier was on exhibition at our office, and will probably be at the Show Grounds of the Md. State Agricultural Society, at the Exhibition this Fall. It was shown at the Maryland Institute Fair, last year, in operation, and received a first premium from the Institute Committee, a silver medal, and the unqualified approval of the Committee. Copies of the circular descriptive of the Drier, and other particulars, can be had on application to the editors of the *American Farmer*, who, by request, believing it to be of great importance to the agricultural community, have agreed to receive orders for it.

At a late meeting of the Alton (Ill.) Horticultural Society, the subject of dried fruits and vegetables was on the carpet, and specimens of strawberries, raspberries, blackberries, corn, sweet potato and pie plant, dried by what was termed the Hawley's process, were exhibited. A committee was appointed to report upon the same, who, with the assistance of a committee of ladies whose aid was solicited, pronounced the dried fruit presented of the very best quality. The Agent of the Dry House Co. was then called upon to explain the process more fully and said:

"We do not claim that this system of drying fruits and vegetables gives us any better product than is obtained by the Alden process, or Ryder process, but we do claim that it gives us a quality of fruit just as good as these.

"We claim further that our apparatus is comparatively inexpensive. I call attention especially to the principle upon which the dryer works; you will then be able to understand how great is the economy of heat, and how necessarily perfect the fruit must be.

"Our small family fruit-dryer, which will dry a bushel of green fruit in a day, is heated by a kerosene lamp. The hot air rises among the fruit, and, having an escape at the top, returns with a downward current, absorbing moisture from the fruit, and falling lower till it reaches the exhaust pipe at the bottom and thus escapes; no dry air can get out of the chamber, so that all the heat is economized, and the fruit is quickly dried with no more heat than is emitted from a kerosene lamp.

"The difference between fruit dried in the sun and that by artificial heat as by this process is very marked. To dry fruit perfectly the heat must not fall below 150°. With less heat than 150°, oxidization takes place. That is, the fruit becomes in a measure rotten, and the flavor is destroyed. By our process we raise the heat to 190° in a few minutes, which dries fruit perfectly in a few hours, preserving the flavor and appearance of the green fruit—so much so, that you can hardly tell the difference when made into pie. The reason is the moisture is absorbed so rapidly that there is no decay.

"The value of it to every man who grows fruit at all is apparent. There are times when you cannot get a paying price for your berries and perishable fruits, which this dryer will save. That is, you can put your fruits in a condition in which they will keep till you can get a fair price for them."—[Vegetables also.]

On Gathering Ripe Fruit.

This is what Josiah Hoopes, well known as a nurseryman and horticulturist of Chester Co., Pa., says:

"In regard to the gathering of ripe fruits of different kinds, no fruit should be taken from the tree or plant during a damp time, and especially when the dew is plentiful in early morning. Never be so hurried as to find any cause for the excuse,—I had no time to hand-pick my fruit, and consequently was forced to shake them off,—for such is poor policy. Fruit so gathered will almost inevitably decay from the effects of bruises. Each specimen should be taken from the tree one by one, handled as if they had been so many eggs. The lightest bruise or abrasion of the skin is the sure forerunner of a dark spot, which will eventually change into some form of rot. The spores or seed of *fungi* are always ready to assist in the work of dissolution, and the slightest scratch gives them a foothold for their destructive work. Scarcely any variety of the largest fruits color and ripen so well if left to perfect themselves on the tree, and especially is this true in respect to pears. Summer varieties, as they approach maturity, loosen their hold somewhat on the limb, and by gently raising the fruit they will easily detach themselves at the proper period. This is an excellent test, and may always be relied on. To color up fruit nicely, all that is necessary will be to spread a blanket on the floor of a cool room, and then thinly and evenly place the fruit on the floor. A second blanket must be spread over them, and in a short time the effect of this treatment will be apparent in the most golden-colored Bartletts, and rich, ruddy-looking Seckels imaginable. Pears perfected in this manner rarely have the mealiness of their naturally ripened companions; nor do they prematurely decay at the core as when left on the tree. Peaches are too frequently gathered before attaining the full size, and when this is the case we need not expect good flavor. They must obtain this requisite before gathering; although it is not necessary to delay picking until very mellow. As a general rule, all small fruits are gathered too early; and, as high color is not a sign of maturity, many experienced fruit-growers are frequently misled. Never pick strawberries because they are red, nor blackberries solely on account of their dark appearance. Each should remain on the plant for some time thereafter. The Albany seedling strawberry changes to a deep crimson hue, and gains continually in size after its first coloring process. It is then soft, and excellent eating. And so with blackberries in like manner, many complaining of their extreme tartness, when the fault was in gathering imperfect fruit. The Lawton or New-Rochelle variety, in particular, is delicious eating, if allowed to remain on the plant until soft, when the slightest touch will sever its hold. Strawberries picked with the calyx (or hull) adhering will always carry better and be less liable to decay than if carelessly pulled off without this appendage. The foregoing remarks in relation to the proper time for gathering fruits are equally applicable to the grape. These generally color long before they are mature; and thus many a novice in fruit-culture frequently forms an unjust opinion of his varieties simply from testing unripe specimens. Grapes should always be severed from the vine with strong scissors or trimming shears, and never twisted or broken off.

The nice appearance of fruits of all kinds, in their boxes or baskets, in the markets, will command a better price than when slovenly "done up."

About Some Potatoes.

Editors of the American Farmer:

Yesterday, July 23d, we ate for dinner the last of the crop of Southern Queen sweet potatoes of 1873, and it occurred to me to ask why this favorite vegetable should not be found on our tables at all seasons. The new sorts make it easy for those who desire to have sweet potatoes every day the year through. The potatoes we ate yesterday were the last, not because they would keep no longer, for they were in excellent eating condition, but simply because we had eaten to the end of them. In ordinary seasons we usually have new sweet potatoes to commence on by this time, but this is an unusually late season and we will be without potatoes for a while. For our main crop of sweet potatoes for table use we

prefer the old Yellow Sweet of Maryland and Virginia, called Yellow Nansemond at the North, and in the lower counties of the Eastern Shore, known as Red Noses, for what reason we can't say, since there is no trace of red about them. These, in their season, are the dryest and sweetest of potatoes, and are also the most productive of any. They are likewise the most difficult to keep, except the Spanish variety. In tidewater Virginia, particularly on the Eastern Shore, every farmer grows a few Spanish potatoes for home use, though they are not usually eaten until the depth of winter, when they become "fat" as it is termed. When in this condition they are baked, the juice will exude from the skin and cover the vessel in which they are placed with a thick, jelly-like syrup. Those who have never eaten a "fat" Spanish potato don't yet know a *sweet* potato. But the Spanish potato is very unproductive and requires deeper soil and better culture for its long ginger-like roots, and is seldom grown for market. A few years ago, a lady who had married on the Eastern Shore of Virginia, sent as a present to her mother in Baltimore, a barrel of fine "fat" Spanish potatoes, as the most delicious gift for the Christmas table. The mother had never before seen any, but though they looked rough, concluded to try them baked as directed. Opening the oven shortly after she found the juice running out of the potatoes, and at once concluded they were all rotten; so without further ado the entire barrel was handed over to the "garbage" man. Great was her regret on learning what a prize she had thrown away.

The earliest of all sweet potatoes is the new variety introduced a year or so ago from South America, and now known as Southern Queen. They are in good eating condition here usually by the middle of July, and when first dug are usually in good eating condition. As the season progresses and during most of the fall and winter they are generally too wet to suit Southern palates. During this time the Yellow potatoes are in their glory. But it is for their keeping qualities that the Southern Queens stand unrivalled. The potatoes we ate yesterday were kept in the loft of the packing house, where there was no fire and were simply piled on the floor and covered with straw and dry Sphagnum moss. This last material we use largely in packing plants and trees, and when thoroughly dry we find it the best of all materials for keeping potatoes or apples. The floor of the loft in which these potatoes were kept was somewhat warmed by the heat from packing room below, in which a fire was kept all winter. The only loss was a few dry rotten ones. As a variety to begin and prolong the sweet potato season, we think very highly of the Southern Queen.

One word to those who would grow good potatoes. It is a great mistake, at least in our latitude, to use animal manures on this crop. The large market growers of the Peninsula found this out long ago, but most private growers continue to ruin their sweet potatoes by using stable manure. In my experience the best results have been obtained from wood ashes or a compost of wood ashes and marsh turf made fine and spread broadcast before ploughing.

In preparing for the sweet potato crop, select a piece of light soil that has been a hoed crop the previous season, plow it not deeper than three inches, harrow and roll, and throw the soil into shallow ridges with the plow, three feet apart. Flatten the tops of the ridges with a light hand roller and set the plants a foot apart. The subsequent cultivation consists of one "bar plowing" and twice ridging with the plow.

I am still experimenting with new vegetables and flowers, and may in some future article give your readers the benefit of them. This is "in memoriam" of the last of the sweet potatoes of 1873.

W. F. MASSEY.

River Bank, Chestertown, Md.

THE COLORADO POTATO BEETLE.—This insect seems to be rapidly extending its field of operations, but it is probable that its full capacity for injury will now hardly be demonstrated until next season, by which time we hope its destructive parasite, found in the West, may reach the East to neutralize its effects. No newer or more effective remedy than Paris Green seems discovered. The disposition in the West now appears to be to apply it with water, as more economical of the material. One ounce well stirred into ten gallons of water is said to be sufficient, and the water is applied with a watering pot. The following is from the *Live Stock Journal*, of Buffalo, N. Y.:

Remedy for the Potato Bug.—In answer to several questions as to the best remedy for this pest of the potato, we can only say that from trial of several different ones, we find sulphuric acid, (oil of vitriol) diluted with fifty times its weight of water and sprinkle over the vines, a perfect remedy, killing the bugs and not injuring the vines. This is much safer than Paris Green, as, after dilution with fifty parts of water, it is entirely safe to handle and sprinkle on with a common watering-pot. This acid is not always of the same strength, and if the druggist's acid is obtained, use 70 parts water to one of acid. This is also the cheapest remedy.

Value of Maryland and Southern Lands.

On the 18th ult. a daily paper noticed the arrival of several bay craft from Eastern Virginia and Lower Maryland, bringing large quantities of potatoes to our market. One steamer, the Maggie, brought 700 barrels, and the schooner Dickerson, from Guilford, Accomac county, Va., 500 barrels. Upon a previous trip the Maggie brought up 2,100 barrels from that section. The *American* says, that the quantity reaching here is very large, and that "for the past ten days about 4,000 bushels of potatoes have been daily sent to Louisville, Cincinnati, Chicago, Toledo, Columbus, Pittsburg, and other points in the West, which have, up to the present time, drawn their supplies from this market. The potatoes are all of the Early Rose variety, and are of excellent quality and large size. Lower Maryland and Eastern Virginia have long been noted for large crops, both of white and sweet potatoes. The latter are stated to also promise a large yield this season."

The paper of same date announces the arrival of the first lot of cantaleups for the season, brought from the Magothy river, Anne Arundel county, Md., raised by Mr. Jeff. M. Cook, who is a large grower; he has also planted 20,000 hills, this season, of watermelons, from which he expects to realize 45,000 good melons, which would probably be in the market before the end of the month. The reporter for the *American*, in making these announcements, says, "the cities and towns in the East and West have become aware of the excellence of Maryland melons, and orders for shipment hence will this year be greater than ever. Some idea of the magnitude of the melon trade can be formed when it is stated that five houses in this city alone handled about one million last season. The delicious flavor of the Anne Arundel cantaleups is too well known to need commendation, and all will be glad to hear that the crop will be a large one."

EARLY APPLES. — Mr. Kerr, of Denton, Md., kindly sends us some specimens of the new *Tetofsky apple*, and, by way of comparison, some of the Early Ripe and Early Harvest.

He says in his note of the 19th ult.: "The last two varieties are from trees about twelve years planted, the Harvest having but a very few apples on it this year. The Tetofsky are from grafts two years old—or rather spring of 1873—and the tree being in a very exposed situation, I was compelled to pull them several days ago, in order to save them, and hence they have taken on no coloring of red, whatever, though it is not high-colored at its best. One specimen of Early Ripe (as noted on it) is from a little nursery tree, and is full one week later than Tetofsky, while the Early Ripe, on trees of same age, is, if anything, earlier than *Harvest, with me.* As to the real merits of the Tetofsky as a market fruit I am yet unable to form a decided opinion, though I am favorably impressed so far."

It is certainly a very handsome apple. The specimens sent are of medium size, oblate, nearly round; yellow, with some signs of red stripes; flesh, white, juicy and fragrant; sub-acid.—As an early market fruit at the North and Northwest, it seems to have established itself as a great success, and we hope it will maintain the same character here and further South. It is of Russian origin.

Securing Apples for the Off Year.

The agricultural department of the *N. Y. Tribune* contains the following hint:

One of the most successful agriculturists in the country is Robert Pell, who has a 1,200 acre farm in Ulster county, N. Y., all in the highest state of cultivation. One feature is an orchard of 200 acres planted exclusively with the Newton Pippin, and the produce of this orchard is famous in England and Europe as well as at home. To attain his present perfection in fruit culture, Mr. Pell studied the art of pomology, and learned how to assist nature in her efforts to support mankind. Commonly speaking the apple tree bears every alternate year. Mr. Pell determined to have an annual harvest, and to give his orchard a handsome start he sacrificed the crop of a bearing year. All the apples were picked while green. He discovered that the germ of next year's fruit was in existence at the time of the apple harvest, but that the tree would be so exhausted that this germ would fail of development, and a year of rest would follow before another crop could be produced. Having stopped his trees from fruiting in the manner I have mentioned, he was sure of a crop on what was generally the off-year, and determined to follow this up by a treatment which would abolish the year system. He learned that trees require a variety of food, the chief of which is found in potash, lime and soda, and his orchard has been thus fed with all the success that could have been anticipated. The potash is found in wood ashes, lime is obtained from oyster shells at low cost (stone lime being undesirable,) while soda is supplied by common salt. Orchards thus fed and judiciously pruned cannot fail of success, and although this season is generally short of apples, Mr. Pell's crop is of usual abundance.

The Vineyard.

Summer Pruning of Grape Vines.

In the American Pomological Society's report, we find the following on this subject from Mr. G. W. Campbell, of Ohio:

"A certain natural equilibrium exists between the roots and upper growth of the vine, which cannot be disturbed to any considerable extent, especially during the growing season, without serious injury. To illustrate this: I have planted a young and healthy vine, with smooth and perfect roots, in early spring. When it had made a growth of two or three feet, I have cut it back to a single bud and leaf at its base, (to use the shoot for cuttings). After this, the plant remains apparently dormant for ten days or longer, when the bud slowly swells and breaks; and if it is a hardy and vigorous variety, is soon making a new growth, but with less than its former strength. When it has again attained a similar growth, I have again shortened it to one bud and leaf, above the former cut. A longer period of rest now ensues, followed usually by a weak and spindling growth of a few inches, with scarce vigor enough to ripen a bud or two at its base before the autumn frosts have destroyed its folinge. Now if we take up this vine, we shall find that all the new roots which had formed previous to the successive cuttings of the top, are dead and rotten. Only the old roots, which the vine had when planted, remain, and these rough, knobby and diseased—the vine in no respect as good as when it was planted in the spring. The vine will bear, without apparent injury, any reasonable amount of pruning during its dormant state, in fall or early spring, but I think the above experiment proves that any severe cutting during summer is an unmitigated evil. All the summer pruning I would recommend, would be the early rubbing out of

superfluous shoots, upon their first appearance, leaving only what is required for next year's bearing wood. This, with the pinching or stopping the ends of such shoots or canes as are disposed to be too rampant in growth, would be all I would ever consider necessary. Some of the most successful grape-growers within my knowledge carefully prune their vines in fall or early spring, and then leave them entirely without summer pruning."

TRAINING GRAPES.—A Maryland correspondent of the *Country Gentleman*, writing of training grapes, spirally on stakes, says he believes it gives better table grapes than are produced by other methods; and he gives a description, with a sketch, as annexed, of a contrivance which does away with the trouble of looking up materials for tying, such as willow, twine, &c., and in fact makes the stakes permanently *self-tying*. Wire staples are driven in the stake about two inches from the top, and on opposite sides—one staple for each cane. The staple must be large enough to admit the end of the cane, and also a little wedge, formed from grape-wood trimmings. His plan is to first twist the cane around the stake, cut it off about three inches above the staple, then bend the end back carefully and insert it in the staple, put in the wedge on the outer side of the cane, give it a tap with a tack hammer, and the work is done. Of course it is understood that the canes are to be renewed yearly, as they should be to get the best results. This "patent" is for the use of all good grape-growers—free of cost.

GRAPES.—In a discussion on this fruit by the American Pomological Society at Boston, Mr. Jno. Saul said of the *Maratawney*, that in the District of Columbia it is, without exception, the finest of light grapes, equal to the *Frontignan*; and that he had known it very productive. He had seen a vine on the side of a house, which reached the third or fourth story, and was loaded with fruit.

PEARS NEAR NORFOLK, VA.—We regret to hear that Mr. G. F. B. Leighton, famed for his splendid pears, will this season have nearly a total failure of his crop. He estimates that he will not ship 30 bushels, instead of some 3,000 as usual.

TO TAN SKINS.—The following method is recommended by a correspondent: Take equal parts salt, alum, and Glauber's salt, and half a part saltpetre; pulverize and mix. Handle the skins and rub the mixture in well three or four times a day, the oftener the better. If there is not moisture enough in the skin to dissolve the salts, put a little water into the latter. We are assured that no moth will attack furs, the felts of which have been thus prepared.—*Scientific American.*

Lawn and Flower Garden.

A Visit from Thomas Meehan.

The numerous friends of this gentleman in Baltimore were gratified that last month he should have paid them a hurried visit, the first that he has honored our city with for some fifteen years. Apart from his distinguished position as the conductor of the *Gardener's Monthly*, and his eminence in the world of taste, which makes him the exponent of the highest advancement in horticultural art, Mr. Meehan possesses so many social virtues, with such genial manners, that either at home or abroad companionship with him is as pleasurable as it is profitable, and for all his friends here we wish him "many returns" to our midst.

Floriculture, &c.—August, 1874.

By W. D. BRACKENRIDGE, Florist and Nurseryman, Govanstown, Baltimore county, Md.

Lawn and Pleasure Grounds.

Would any sane person assert that during the hot, dry weather of the past month, that at noonday it was not agreeable to take shelter from the sun's rays under the shade of some fair spreading tree? If there is, we could entertain little sympathy for such a one if found prostrated under old Sol's penetrating beams. Every sensitive person must have felt that under a dense headed tree in hot weather, that there is a constant current of cool air passing under it, which is not perceptible in moving a few yards off.—The sun's influence we all know is beneficial to our physical system, but variety is said to be the spice of life, therefore let that variety be of the refreshing and agreeable kind; hence we say, plant trees near your dwellings and along your turnpikes and public avenues; but some one will want to know what kind of trees to plant. Then we would say, that if you are in a big hurry for shade—as most people are—plant silver-leaved Maples; but if your taste tends in the beautiful and permanent line, then adopt the Norway or scarlet Maple, and should the situation be exposed to high winds, the European Sycamore is the tree that will give satisfaction. No one—or at least very few—think of planting our fine Oaks on their lawns, and when nurserymen raise them, they usually prove uncalled-for stock; it is true, they do not grow so fast as Poplars and Maples—but they are lasting, and if people will lay apart money for posterity, why not plant for posterity also; we have no handsomer trees than the scarlet, chestnut and willow-leaved Oaks, and there are other species equally fine. In moderately moist deep land the Tulip tree and white Ash are desirable both for beauty and shade, and, in the same locality as to soil, the American Elm should find a place; but Horse Chestnuts and European Lindens should be introduced but sparingly, as they are so liable to shed their leaves early in the fall, and are but slow growers.

What would our readers think of an avenue of Magnolia acuminata—the Cucumber tree of old Virginia: this would be something handsome, and then on the lawn in solitary specimens or a grove of the following sorts, viz: M. Macraphylla, Cordata, Tripetala, Soulangeana and that ever to be admired fragrant sort—the swamp M. Glauca. Further south of us the rusty-leaved varieties of the M. Grandiflora would form the king of the party; all these may be had in our nurseries at a cost not much exceeding that which is paid for the common kinds of shade trees.

There is a set of trees with Pea flowers and pinnate leaves well adapted for lawns, from the fact that grass will grow under their shade.—Among the first of these we name the Honey Locust, and which, by-the-by, makes also a very good hedge plant if kept well cut down when young. And then, as a useful timber tree, there is the white Locust—Robinia pseudacacia, and as a companion to this there is the Yellow Wood of the West, Virgilia lutea; and for the South we would recommend the St. John's Bread—Seratonia Siliqua—and Parkinsonia aculeata, which, though a native of the West Indies, appears to thrive well in our Southern States, as well as in the South of Europe. As small-sized Pea blossomed trees, the English Laburnum or Golden Chain, with our own Red Bud, Cercis Canadensis, should by no means be overlooked in making a selection.

The most necessary work to be performed at this season will be in keeping the grass neatly cut, and holding weeds under subjection, both in the flower beds and walks. It is very desirable, both for the benefit of yourself and friends, to collect and cure seeds of choice flowers and trees. Dahlia growers, as a general thing, train their plants to a single stem, which is tied up to a stake; this method does very well if the locality where grown is sheltered, but in exposed situations they are liable to get broke by the wind, and the flowers, when trained in this way, are not so perfect in color or form as when they are permitted to lay along the ground—much the same as Tomato vines are usually grown.

Greenhouse.

In this department, particular attention should be paid, in seeing that all plants in pots are regularly watered and not overrun with insects; keep lifting the pots every week or two, so as to prevent the roots from passing down into the ground; and about the latter end of the month, the whole collection should receive a general overhauling, by giving larger pots to such as want it, top-dressing others, and tieing up to stakes all that stand in want of them.

Sow seeds of Pansies, Chinese Primroses, Cinerarias and Calceolarias—reserving a little seed for a second sowing.

The Maryland Horticultural Society.

The July meeting was held on the 14th, at the residence of Mr. E. Whitman, the President, the occasion being one rather of a social character than for the transaction of business. There was no display of plants, flowers or fruits.

Mr. Thomas Meehan, editor of the *Gardener's Monthly*, was present by invitation and delivered an address, and a paper was read by Mr. John Feast, Sr., giving some account of the progress of Horticulture in Baltimore, in which he alluded to having been, in 1825, the first person to offer plants for sale in the markets of this city.

We regret that we cannot give in full the remarks of Mr. Meehan, which were delivered extemporaneously and in his usual clear and felicitous style. An abstract would fail to do them justice, even had the facilities been at hand for making a report, whilst those of the daily papers were too brief to be serviceable. The principal object of the speaker was to show the elevating, humanizing influence of the cultivation of flowers, as a pleasure and recreation, independent of its phases as a commercial pursuit; the importance of proper collections of facts, which, useless now, may hereafter become of great value, when their growth and relations are established; and the harmonies and beauties developed by researches in Botany, as an aid to Horticulture.

After these addresses, and some general remarks by other gentlemen, the meeting adjourned to partake of an ample and handsome collation, with all the customary appendages, which had been prepared by the host, and to which full justice was done by the large number of invited guests and members of the Society present.

Fragrant Memories of Summer Travel—No. 2.

A DAY AT FAIR HAVEN.

BY JANE BOSWELL MOORE.

It is a question in my mind whether any one (not an artist) who has been city born and bred, ever really appreciates the perfection of nature's vivid color—*green*. Its beauty may strike the belle in a superb set of gold and malachite, but do we, after all, rightly prize a field of green, or a tree in full leaf as it stands against the peerless blue of the sky?

So we thought, at least, as we made our way over the lush water grass on the shore of Fair Haven Summer Resort to one of the many "Points" of land jutting out into the Bay, the coves or inlets between each, white with sand, shining pebbles and stones. We had been to this spot before on days when the heat in the city was great, but then we had only loitered in the high piazzas of the hotel, lingered listening to the music of the band or the sound of dancing feet in the spacious pavilion, or watched the self-propelling swings, and their many occupants; family groups, dining under trees, in the picnic style, benches and table being ready for them, spread with sandwiches, familiar bottles of Heslop's appetizing sauce, home-made pies and cake; the long, narrow landing reaching out into the water, at the extreme end of which the large and splendid steamer "Theodore Weems" waited for us; the shooting gallery, the amazed group around the galvanic battery, and the passers in and out of the hotel, where ice cream, rich and cooling, was served from Packer's freezers, simple, but perfect inventions, all unknown in the days when Mrs. Martha Washington first astonished her guests in New York, by serving for *their* entertainment what is now within the

reach of *all*. But this day, so cool and calm, invited exploring parties, which scattered in all directions: some towards the old Windmill used for grinding corn, some beyond the corn-field, and many to points, inlets, ravines and coves, to watch, before the tide came in, the movements of crabs and tiny fish. How the children enjoyed it! It makes one thank God that individual benevolence has made it possible for thousands of poor, neglected ones, to look back upon, at least, *one such day*, in their dreary lives. How many times, through months and years of poverty and wretchedness, will the gladness, joy and beauty of this scene live again in memory, to be talked and dreamt of. It is pleasant to know that some older ones, whose journey and struggle of life are nearly over, are soon to come hither, to sit in quiet under the trees, gaze out on the Bay, here twenty miles wide, and talk of their journey together, as they will again when they have crossed life's sea, and entered a haven of rest. Few more quiet beautiful spots can be imagined—reached after a four hours' sail, and a breeze that is in itself almost life-giving.

"If we never landed at all," says a gentleman passenger on board the steamer, "I would prefer it to all the sails round Baltimore."

From the cool dining-room (where we find oysters and crabs, fresh from the Bay, among other delicacies,) we look out on the swaying branches of trees, which in front almost dip into the water, growing as they do along its edge.—But our party, luxuriating in the shade of an old sycamore in a sheltered cove, hears with regret the whistle of the "Theodore," telling that it is nearly time for starting. As visions of city brick, heat and dust rise, the general disgust increases; "Don't you hate to go?" asks one of a gentleman in another party. "Yes, but we *must*."—Must is a very disagreeable but powerful master; so looking anything but amiable under his rule, we leave. The picturesque shore and landing, with the trees, soon fade from view, and later in the afternoon we pass Forts Carroll and McHenry, the lighthouse on the coast, the immense elevators of the Baltimore & Ohio Railroad, the great corn and fruit-canning house of McMurray—a single room being seven hundred feet in length—stretching to the water's edge, and many large and small steamers. It is, however, a burlesque on the city, to see as we get into the Basin the various distortions and grimaces of inexpressible disgust on the faces of passengers, who, trying to see what they can of the objects around them, tightly grasp handkerchiefs saturated with Read's Grand Duchess, with which they strive to deaden the sickening stench of that great cesspool. "Tis an ill wind, indeed, that blows no good," and more than a score of small lads pursue the profitable vending of this same, nevertheless the Basin in its present condition is a foul blot on the city, and the breaking out of some pestilence (as well as the fearful death rate) may show it to be the most wretched form of economy. Better retrench in some other quarter, and not risk the lives of three hundred thousand human beings.

LABELS.—The best labels for plants and trees may be made by writing with a lead pencil on slips of zinc, and attaching these to the plants by copper wire.

Plants for Vases.

Editors American Farmer:

We have seen and heard much latterly of the correct way to plant vases, or perhaps it would be better to say, to fill vases with plants. It has always appeared to me desirable to consider first the fitness of things. If we plant a bed, it is well to adapt the size of the plants we use to the purpose intended. In planting a geometrically laid-out flower garden it is absolute necessary to keep in view the design; so in planting a vase: if it be intended for a vase of flowers, let it be so; if for a single plant, as a fern, &c., good taste is not outraged; but do not let us attempt too much.

We have covered the surface of a vase with *Lycopodium denticulatum* when a specimen *Cyathea* has been growing therein, and do not think it objectionable. The same may be said of *Tradescantia*, with a little qualification. We do not think it at all advisable to attempt planting a ribbon bed in an ordinary-sized vase. We say *attempt*, because we have seen frequent trials of the plan, but never a success.

If we take one of the light, elegant vases usually found in drawing-rooms, for the purpose of holding flowers, and put therein one truss of Everlasting pea, one of Mignonette and a sprig of Smilax or a frond of maiden-hair fern, we have something light, airy and graceful. Ought not a vase to be planted after the same manner? We usually select nice, well-grown plants, of short stocky growth, well furnished: *Coleus* or *Achyranthes Lindenii*, or *Borbonia*, for centre, and put *Nierembergia gracilis* with it; then we use in "glorious profusion" such plants as *Maurandia*, *Mikania scandens*, *Thunbergia*, *Tradescantia*, *Torenia Asiatica*, *Tropæolum*, *Verbena*, and many other plants according to the position of the vases, whether shaded or otherwise.

For upright plants amongst these trailers and climbers we place dwarf-growing, free-blooming fish geraniums, with here and there one of the scarlet cut-leaved varieties, also plants of *Pilea*. It is, of course, of the first importance to have the drainage perfect, so that the soil may never become water-logged Have the soil such that all the plants will grow luxuriantly; then keep the upright growing plants pinched in so that they will never become leggy, but keep well filled up with foliage. The foliage of the cut-leaved varieties of geranium, *Nierembergia*, *Pilea*, &c., prevent anything like a heavy appearance, and we think the effect far preferable to the usual plan of putting a strong geranium, *Coleus* or any rank-growing variety of plant in the centre, allowing such to outgrow and overtop everything beside. For a white-leaved plant we have found *Gnaphalium lanatum* well adapted for vases, although not good as a bedder.

We do not say the exact number of plants nor the varieties which may be put into a vase at one time; every one can make a selection suited to the purpose, and if plenty of trailers be used, and the upright plants be judiciously placed and kept in proper trim, we do not think a vase will have a crowded appearance. N. F. F.

[We have two large (home-made) vases, one on either side of our front steps, which, though arranged late, begin to assume a good appear-

ance, and while we cannot claim taste and experience like our correspondent, we venture to give their contents. In one, the centre plant is a medium-sized *Dracæna terminalis*; in the other, a *Dracæna Draco*. Around these are dwarf geraniums and *Manettias*, and variegated ivies, sweet peas and *Tropæolum*, while *Senecio* hangs down and envelopes the pedestal, and Moneywort gracefully conceals the structure of the vase. They may not be artistic, but they are pretty.—*Ed. A. F.*]

THE LOVE OF FLOWERS.—A lady correspondent of the *New York Times* makes the following appeal for encouragement from the liege lords of the fairer portion of God's creation in the rearing of flowers. The appeal is equally applicable to these regions. She says:

"In your paper of May 20, I read a communication from a Mr. John B. Sands, stating he loved flowers for their adornments, and thought every home ought to have them. I think every true lover of flowers ought to extend him the right hand of fellowship, that we have one man who will say he loves flowers because they are ornamental. As a rule they think they look very nice, but it takes so much time to keep them so. I consider them a cheap luxury, one I cannot afford to be without. They are lessons of themselves, teaching us the goodness of our Creator in placing so much here to please the eye, as well as nourishment for the body. All ladies are lovers of flowers, as you can well attest by looking at bonnets, hats, &c., of the present time. I think if we could have a little help from the gentleman side of the house many homes would look more inviting, and many of us (if our hands are browned) rejoice that we have such flowers to cheer us. Come in the ranks, men, boys, one and all, that you may watch the opening buds and take pride in our great flower-beds. See how much happier you will be for a few hours work, and how much higher will be your aspirations."

THE RED SPIDER.—Mr. Meehan says this pest is very troublesome to box edging and indeed other plants growing in the open air. Few have any idea of the enormous increase of Red Spider in gardens and the great amount of injury done by it. Thousands of plants set out in Spring dwindle or die outright at this season, and the loss is set down to many causes but the right one. The leaves are first dotted with yellow spots, which grow larger while the green grows smaller, and at last die away altogether. If they are taken in time the insects will not increase much; an occasional examination will show their existence in occasional instances, and these may be destroyed by rubbing the finger under the leaves, but when it becomes numerous the syringe must be used to throw water slightly impregnated with coal oil in and about the leaves. Just enough oil to give an odor to the water will do. There is danger that an overdose will injure many of the leaves, but it can do no more injury than the Red Spiders will, and if you destroy the insect with the leaves, a new crop of leaves will come out, which will be clean of all encumbrance.

It is worth a little unpleasant feeling to get rid of such mortgages on your capital stock. Not only flowers but evergreens are very liable to this Red Spider pest, and particularly the evergreen tree-box, all of which must be treated in same way. The water, of course, must be drawn up by the syringe from near the surface, as oil will only float on the surface of the water. In this way there will be enough drawn up with each syringe full to serve the desired purpose. To distinguish the Red Spider, remember it is not always *red*. Its color is in a measure determined by the plants on which it feeds, just as a man is known by the company he keeps. Sometimes it is brown or nearly green, or white, and so small that many cannot see it without a lens. The yellow spotted leaves, however, under which is a very fine webby process, will always tell the tale. The Red Spider, the scale, and the aphis tribe, of which there are many species, are the chief insect enemies in flower gardening, all of which may be and let us say must be kept in check by the above directions being adhered to.

A SPRING HOUSE AS A PLANT CONSERVATORY. In Mr. Berckman's *Farmer and Gardener*, there is a description of a spring house which is used as a conservatory. Over a bold spring a brick house has been erected, 24 feet in diameter, and arched overhead, with six feet of earth on the arch. In the centre of the house is a pool 16 feet across and 4½ feet deep, the capacity of the spring 15 gallons a minute. The temperature of the water is 62 degrees; that of the house is uniformly similar, although in extreme cold weather it has fallen to 55 degrees. The entrance to the house, six feet wide, is *never shut*, even during the coldest weather. Above and around the inner wall of the house are shelves, upon which numbers of very tender plants are placed, which are never watered but remain in a most luxurious condition all winter. Begonias and other succulent plants of like character were in fine growth. It is suggested that the fortunate possessors of fine springs like this might use them to great advantage in building over them conservatories where *water* is made to do the duty of *fire*, as in the novel instance described.

THE TAMARIX.—Of this pretty shrub, which in this part of the country is not often seen, the *Flower Garden* says:

These very elegant and hardy shrubs should be more extensively used in our gardens and lawns. The flowers and foliage both are ornamental; the latter remaining till quite late in the season. Its numerous branches are profusely covered with very delicate, slender, thread-like leaves, which give them a feathery effect; somewhat like, but more elegant than those of the graceful Pines. The flowers are very minute, appearing in the spring before the foliage, and covering the plant with long terminal spikes of pinkish blossoms. The shrubs bloom a second time in the autumn, but not so profusely. They require a deep sandy soil, and present the best effect when planted singly in the grass. When once established, no further attention is necessary except an annual pruning. But this is of great importance. Cut them back, half way down, every spring, as otherwise the branches will grow scraggy and awkward.

The Poultry Yard.

Gapes in Chickens.

This disease, so destructive to young chicks, was very prevalent this season—the damp and cold weather of spring appears to have more than usually affected them. Prof. C. V. Riley, in a paper in the New York *Tribune*, in describing the worm, says:

"Dr. Wiesenthal, Professor of Anatomy, at Baltimore, accurately described the disease as early as 1797, and traced it to its proper origin. Various curative methods may be employed.—Dr. Wisenthal pointed out long ago that the simplest plan consists in stripping a feather, except a small portion near the tip, which is introduced into the windpipe, twisted round a few times, and withdrawn. Several of the worms will be found attached to the feather. Although this plan, if repeated, often proves entirely satisfactory, it occasionally fails to dislodge all worms. It is more effective when the feather is previously steeped in some medicated solution, which will destroy those worms remaining in the windpipe. Salt, a weak infusion of tobacco or oil, is often successfully employed. An external application of turpentine to the throat is sufficient to kill the worms, but unless much care is taken the bird itself may he killed by the drugs employed. * *

My friend Dr. N. H. Parren, of Chicago, recommends as the only remedy which he found serviceable, carbolic acid, both as a preventive and as a pretty sure remedy. He dissolves one grain of pure chrystaline carbolic acid in ten drops of alcohol, and adds half a drachm of vinegar.—With a feather, stripped as described, and moistened with this solution, the windpipe is cleared. A few twists will dislodge the worms, most of which will adhere with slime to the feather; those not removed in this manner will die from the contact with the mixture. Great skill and dexterity is required, and also some little knowledge of the anatomy of the parts, or the already half-suffocated bird will be killed instead of cured. The bird is next put in a clean coop, with some shavings moistened with a solution of carbolic acid (half an ounce of the chrystaline acid well mixed with one quart of water.) Flour of sulphur, with a little ginger, is mixed with the food, composed of barley meal and coarse corn meal, which is given in tin boxes placed conveniently to the patient. A few drops of the last-named solution may be added to the drinking water.—The mouth and beak of the bird should be washed with some of the solution, and the old shavings replaced by well-sprinkled fresh ones each morning and evening. If the disease is at all curable, and the birds are kept dry in a warm place, it will be cured within three days. Mr. J. H. Harkness, of St. Louis, who has had large experience, has had good success by using sulphurous acid instead of carbolic acid, diluting it with about five parts of milk, and applying it with the feather as already described. Prevention being better than cure, great care should be taken to destroy the parasites, after removal, by burning them, else the mature eggs will escape destruction, and the young parasites will ultimately find their way into the air-passage of other birds."

State Fairs for 1874.

American Institute, New York,	Sept. 9, Nov. 14
California, Sacramento	Sept 21, 26
Cincinnati Industrial	Sept. 2, Oct. 3
Colorado, Denver	Sept. 22, 26
Georgia, Atlanta	Oct. 19, 26
Illinois, Peoria	Sept. 14, 18
Indiana, Indianapolis	Sept. 7, Oct. 7
Iowa, Keokuk	Sept. 21, 25
Kansas, Leavenworth	Sept. 7, 11
Maine, Lewiston	Sept. 22, 25
Maryland, Pimlico	Oct. 6, 9
Maryland Horticultural, Baltimore	Sept. 9, 11
Maryland Institute, Baltimore	Oct.
Michigan, East Saginaw	Sept. 14, 19
Minnesota, St. Paul	Sept. 8, 12
Mississippi, Jackson	Oct. 26, —
Montana, Helena	Sept. 14, 21
Nebraska, Omaha	Sept. 29, Oct. 2
New England, Providence, R. I.	Sept. 1, 4
New Hampshire, Manchester,	Sept. 29, Oct. 2
New Jersey, Waverley	Sept. 14, 19
New York, Rochester	Sept. 14, 18
North Carolina	Oct. 10, 16
Ohio, Columbus	Sept. 7, 11
Pennsylvania, Easton	Sept. 29, Oct. 2
St. Louis Association, St. Louis, Mo	Oct. 5, 10
Virginia, Richmond	Oct. 27, 31
West Virginia, Clarksburg	Sept. 22, 24
Wisconsin, Milwaukee	Sept. 7, 11

A Useful Hint.—When your seeds are planted, unless the day is cloudy and showery, they will require shading from the heat of the sun.

I find old newspapers are the best protection; but, if the patches are small, flower-pots can be inverted over them. The newspapers must be laid over the seeds, after they have been well watered, and fastened at the corners by small stones or a handful of the earth. At night they should be removed to let the dew moisten the ground, and put back before it is dried in the morning. Continue this until the tiny leaflets appear; then remove them entirely. If the ground is dry, the seeds must be thoroughly wet every night. Moisture is very needful to germinate seeds, without its aid they cannot sprout. You often hear it said, "I planted fifty to sixty varieties of annuals, and not half a dozen sprouted. I have no faith in the seedsmen; they send out old seeds." "Did you water them well, and shade them from the noontide heat?" is asked. "Why no, I never thought of that. I planted them, and supposed that was enough." My fair friends, unless the clouds favor you and drop rain, or hide the sun for three or four days, your seeds will become baked, and shrivelled, and you cannot expect them to grow. "*Every Woman her own Flower Gardener*:"—Henry T. Williams, New York.

Farm Buildings.—We would be obliged to any of our readers who have barns, stables, &c., which by experience have proved convenient and well adapted for general use, if they would give us plans and descriptions of the same. A plan of a good barn adapted to this section of the country and for mixed farming, is inquired for by several readers.

Garden Walks.—A Carroll county, Md., subscriber inquires for a good composition for walks that can be swept and are not liable to wash. Have any of our readers experience on this subject which they can communicate?

The American Farmer.

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WM. B. SANDS, } Editors and Proprietors.

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Transient Advertisements payable in advance—all others quarterly.
Advertisements should reach us by the 20th of the month, to secure insertion in the succeeding issue.

AUGUST 1, 1874.

OUR AGENCY BUSINESS.—We refer our friends to our advertisement on cover, from which it will been that we offer our services as usual for the purchase and shipment of all kinds of fertilizers, agricultural implements and machinery, improved live stock, &c. Our facilities are such that we can promise those who wish to avail of our services to give their orders prompt and careful attention.

MR. G. C. GILMER.—We regret to learn that our venerable correspondent and friend had a slight attack of paralysis early last month. This prevented the sale of his lands, heretofore offered in the *Farmer*, and as it will be seen by an advertisment elsewhere, he now offers to rent them to good tenants on terms which will be found excedingly liberal.

THE CORN CROP.—The Agricultural Bureau's report for May shows a large increase in the corn area for this year, estimated as high as two million acres, or six per cent. above the breadth of last year. The percentage of increase is largest in the South.

The rains of the 10th and 20th of July in this vicinity, have been the saving of the crop, where it had obtained a good start—but many fields are too poor to export much more from them than the fodder. The rain of the 20th July was just in time to relieve the corn from the effects of the drought which had been felt for weeks, that of the 10th being very partial and slight.

The harvest has been finished, the seasonable weather for getting in the small grain and hay crops having been unusually good, and these having been secured, generally, in excellent condition, and with a satisfactory result. The potato crop is promising well, though not extraordinarily so. The accounts of the tobacco crop have not improved its chances since our last, and it will undoubtedly be short. Of the peach crop it is still hard to speak with certainty, though there seems no reason to change the reports heretofore made in our pages.

Manufactured Fertilizers.

The past season was generally very favorable for producing good effects from artificial manures, and from every quarter we hear of their proposed extensive use the coming seeding. A number of the most extensive and well-known manufacturers of this city are represented in our advertising columns this month.

J. J. Turner & Co. offer, as usual, their old established "Excelsior," their Ammoniated Super-Phosphate, and a new article of bone dust made at their own works. W. Whitelock & Co., one of the oldest houses in this trade, offer their "Vegetator." R. W. L. Rasin & Co. present a number of testimonials of the efficacy of the Soluble Sea Island Guano, and also offer an article which from its composition ought to be a good one,—Ground Bone and Meat. George Dugdale & Co., also offer their "Excellenza." Joshua Horner, jr., and John Bullock & Son advertise Ground Bones, and the former also his Maryland Super-phosphate and Vitriolized or Dissolved Bone. John S. Reese & Co. offer Soluble Pacific Guano; Andrew Hammond, Coe's Phosphate; an dJohn M. Rhodes & Co., Moro Phillips, and Hachtel & Co., present their Super-phosphates. From these it ought to be easy to make a choice. Persons desiring to make their own fertilizers can obtain the chemicals from R. J. Baker & Co., and the sulphuric acid from them or Symington Bros. & Co.

Any of the articles advertised in the *Farmer* may be ordered, if parties so wish, through our *Agency*.

GRAIN DRILLS.—Of these valuable machines we have offered in our pages the old established Bickford and Huffman, by Messrs. H. P. Underhill and John C. Durborow, and the more recently introduced "Hagerstown," by Griffith, Baker and Bryan.

CHANGES IN AGRICULTURAL PAPERS.—The *Practical Farmer*, of Philadelphia, has absorbed the *Journal of the Farm*, of the same city. The *Rural Southerner* and *Wilson's Herald of Health*, of Atlanta, Ga., have been united, and the subscription list of the *Plantation*, also formerly published there, is merged with theirs.

Manures for Wheat and Rye.

We feel that we cannot be too urgent in directing attention to this subject at this time, when farmers are making arrangements for putting in their fall crops. There are a few considerations which cannot be overlooked—the first of which is, that it is useless to attempt to raise a paying crop of wheat, without giving heed to what is now the experience of every intelligent and observant raiser of that cereal.

In the language of a cotemporary, who is only reiterating our own oft-expressed opinion, to make twenty bushels of wheat or more grow on an acre of common land requires first-rate tillage at the *right time* in the matter of cultivation, and good husbandry not to permit any of the most essential elements of crops to lie dormant in the soil, nor run to waste, borne along mechanically or in solution, by moving water. Early and deep plowing prevents surface washing, so injurious to any valuable agricultural plant, and especially to wheat with its rather feeble fibrous roots. By all means give these roots a well prepared seed-bed with both organic and inorganic pap or pabulum, ready for use. No farmer thinks of feeding and fattening hogs or other animals without providing suitable food for them in advance. To make money by raising wheat, one must learn to feed growing wheat plants both bountifully and economically; and to do this he wants time before seeding to prepare the ground to do its best.

The second point is, to give such food as the plant requires. We have shown in a recent number of the *Farmer*, from the most reliable authorities, that the application of phosphates of lime and other mineral fertilizers, should be made in connection with farm-yard manures or the composts prepared on the farm. The more of the latter you apply, the better the result will be found from the commercial fertilizers used in connexion with them. The organic manure, from the farm-yard, supplies the food for the straw and the leaves, &c., of the plant, whilst the phosphate of lime gives the material for the grain.

We hope the agriculturists who read our journal will not fail to study the many important questions we are now presenting to them in these pages—we believe more light is now being thrown by science upon the subject of manures than has been shed upon it for many years, and we feel satisfied that every farmer, whose land is not entirely destitute of the necessary constituents of the wheat plant, can produce a good paying crop by giving the proper attention to its prerequisites. In our last we gave a fertilizer formulæ of one of the most successful and intelligent farmers of our vicinity, the result of whose croppings this season has justified his outlays. Our own experience with wheat and rye this year has been extremely satisfactory, and our course is only a repetition of what we have before tried. Phosphate of lime, from bone dust, with barn-yard manure, has been found to fulfil all our expectations of the application upon a soil naturally kind but much depleted by continued croppings without restoring to the land those substances which have been sold off in the grain sent to mill. We believe that the formula used by some of the English farmers is for our lands (rather disposed to stiffness) as good a one as we could offer—viz:

250 to 300 lbs. Bone Dust. (Medium fine.)
75 to 100 lbs. Peruvian Guano.
100 lbs. Packers Salt.
50 lbs. Muriate of Potash.
10 to 15 two-horse loads Stable Manure.

These quantities can be reduced or increased, according to the ability or disposition of the farmer, for an acre. Dissolved bone or phosphates is prepared by some, who do not contemplate receiving any appreciable advantage after the first crop, but calculate on repeating the dose each succeeding year—this latter course is best for a yearly tenant, and we have no doubt a larger yield the first application will be the result, but when the food for the timothy and clover is to be provided for, we think it better to apply a sufficiency to last longer than is necessary for the wheat or rye alone. The super-phosphates made by the use of oil of vitriol with bones or mineral phosphates will undoubtedly tell better than the raw bone, but, as already remarked, is not to be relied on as a permanent improvement of the soil, for the calculation is, to absorb all its virtues at once. Mr. D. Dickson, of Georgia, practices upon this plan, and calculates upon supplying the usual quantity to every succeeding crop, considering that it pays him a heavy interest to do so. He, however, emphatically advises the application of all the home-made manure you can provide along with the super-phosphate.

The Peruvian guano is recommended in the above formula as particularly serviceable to the fall-sown cereals. It gives forth its stimulating powers in pushing forward the plant through the fall and winter, and the guano named is sufficient to last until the spring. Then as the warmth of spring begins to operate on the bone-dust, it decomposes, and, in turn, gives forth as needed by the requirements of vegetation the 2 or 3 per cent. of ammonia it contains, which becomes thus available for the continued growth of the plant as it begins to make the grain, the breaking up of its texture freeing the nitrogen and at the same time rendering soluble and available the phosphate of lime and other minerals present, and needed as the season advances for the perfection of the grain.

Clover at the South.

Rev. C. W. Howard, in his work on grasses, says, that the doubts as to whether red clover would succeed at the South, have been dispelled. There have been fine clover fields from Hutchinson's Island, opposite Savannah, in the middle country, and among the mountains. In no part of this State, or any other of the Southern States, has it finally failed after intelligent and persistent trial upon proper soil. A farmer may have sowed clover and failed. Perhaps he may also have sowed wheat, or planted cotton or corn and failed. But this does not deter him from sowing or planting again. He knows that he must have made a mistake, or the seasons may have been against him. These failures in clover may be attributed to bad seed, or too deep cover-

ing, or to unsuitable soil, or to a very hot and dry season.

This plant is of so great importance that these causes of failure should be carefully investigated and corrected by a different practice in the future. One, or several failures, should not discourage in a new and important culture. Many persons have succeeded in growing clover in all the different sections of the South. Why not all succeed who have suitable soil?

Dr. Lee says, "if the experience, observation and study of fifty years are worth anything in agriculture, there is a good living and plenty of money in grass for Southern farmers, whenever they will take the trouble to investigate the subject properly. Thirty years ago H. S. Randall, in his "Sheep Husbandry in the South," pointed out the fact clearly and conclusively, but like other works on Southern tillage and husbandry, it fell still-born from the press. Now, however, efforts are necessitated to be made in that direction, and in a letter from Gen. Cheatham, in the *Rural Sun*, of Nashville, the fact is proved that all that was urged by Mr. Randall in favor of sheep-raising at the South, and the cultivation of the grasses, have the past few years been fully realized by Gen. C. and others. The introduction of Lucerne, (sometimes called Alfalfa or Chilian clover.) Orchard grass, Hungarian and Millet, at the South has been found very successful, as well as the red clover, and the disposition is manifested in every portion of these States still further to test their usefulness.

Mr. H. O. Dixon, of Miss., says, while he has found timothy wholly unsuited to that climate, in regard to the cultivation of red clover gives the following as the result of his experience:

"My experiments with clover and grass have thus far been so successful as to induce me to extend the area, the past fall and winter, to thirty acres. All of this appears to be doing well, although necessarily much retarded by the excessive and continuous rains. My old clover is now (May 9) knee-high and blooming, having been pastured during the winter by my breeding-ewes. I also have a piece of clover, now in its fourth year, which has been closely pastured the past two winters, to the middle of March, by cattle and mules. That is apparently as far from giving out as at first. It is now over a foot high. The orchard grass, on good high land, is very fine, and is now throwing up seed-heads. The red-top or herd's-grass (not timothy) does well on both high and low lands. It is now about a foot high. All the grasses have been severely tested by drought, as intense as ever visits this region, without the least appearance of failure; so that I can truthfully and knowingly assert that this part of Mississippi is well adapted to the grasses named above."

The Use and Economy of Fertilizers.

Prof. Piatt, of Washington and Lee University, in an address before the Va. Agricultural Society, at its meeting held on the occasion of the British Settlers' Celebration, took the well-established ground that "if everything removed from a good rich soil was returned to it, it could never be impoverished, but on the contrary would grow richer and richer by the accession of material that was not derived from the soil;" and says, that as this is seldom or never the case, the necessity arises of resorting to commercial manures to supply the waste of such elements as are drawn from the land and sold off in the form of grain, hay, tobacco, cotton, live stock, &c."

The question therefore for the farmer to decide, is, what fertilizers are there which can be found most suitable to supply that waste? This is answered by the speaker in the following way:

"Of all the constituents of a *commercial fertilizer*, there are practically *but three* that make a good investment for the farmer. 1st, and most important, Phosphate of Lime. 2d.—Potash, or its salts or compounds. 3d.—Nitrogen, in organic compounds, *Nitric acid or Ammonia*. As agriculturists it is alone to these three elements that you should direct your attention. Pay your money only for *these*, pay only for what you *actually receive*, and pay only the market price for *each*."

The Professor is no believer in *permanent* manures; he says these elements must not only be present but must be in a soluble condition, so that the roots of the plants may feed upon them at once. Since, if they are not soluble, they feed the plant too slowly and too scantily for large crops, and "remain in the ground, year after year, as permanent fertilizers, yielding small and scanty dividends on the money invested in them by the planter."

He continues by saying that "true economy and thrift demand that just so much fertilizer should be applied annually as a heavy crop will take away, and he who most nearly attains this standard, most nearly reduces high art to science and makes the most successful farmer. Their philosophical use supply the elements in soluble form. The prime requisite then is *solubility* of the valuable ingredients. Now of the three valuable elements, the nitrogen compounds and the commercial forms of *potash* are all readily soluble in the soil, while all natural forms of phosphate of lime are practically insoluble (such as bone, bone ash, mineral phosphates, South Carolina phosphates.) It is the business of the manufacturer to make *all the phosphate of lime soluble*. All phosphate of lime, in its natural state, is insoluble in water, whether it exists in form of fresh or raw bone, fossil bone, coprolite phosphatic guano, or chrystalized mineral. In water containing carbonic acid these are *slightly soluble*."

On these points is presented the following testimony of David Dickson, of Georgia, as found in a letter of his published in 1868:

"Last year I used twelve thousand dollars' worth of commercial manures. From my experience I will give my plan, hoping that others may give theirs. I am for an annual manure—a soluble manure—one that will return the principal, or at least seventy-five per cent. of it, with one hundred and twenty-five per cent. profit, or double the investment. I am for an investment that never pleads for time, or complains of usurious interest, or calls for relief or repudiation, but will punctually square up accounts with one hundred per cent. profit. Such an investment *is soluble bones and Peruvian guano*. Lend it to

your land in sums of from five to fifteen dollars per acre, at six months time, and if you do your duty the payment will be sure. I have no use for a permanent (insoluble) manure. If permanent, it is not soluble. If not soluble, it will never enter the roots of plants, and if it does not enter the roots *your money is gone; no manure is worth a cent if permanent.* So away with your permanent manures. Buy lots of soluble manures, and save twice as much as if you bought none. Give me the manure that will pay promptly with good dividends."

Drilling Wheat.

In one of the recent reports of the Department of Agriculture, the following are given as the results of investigations as to the extent and advantages of the use of the drill:

1. Fifty-two per cent. of the winter wheat, and thirty per cent. of the spring wheat, or about forty per cent. of the aggregate of both kinds, represent the proportion seeded with a drill.

2. Nine-tenths of the testimony given asserts the superiority of the drill for winter wheat.

3. An average increase of one-tenth in the yield is assured by the use of the drill.

4. A large majority of observers declare that in most soils in which injury resulting from frost is liable to occur, drilling prevents or reduces the loss.

5. The majority assert that in certain clay soils with rolling surfaces, some advantage accrues in surface-drainage by use of the drill; while in some heavy soils with flat surfaces, the water freezing in the drill-furrow does positive injury.

6. The broadcast seeder predominates in spring, wheat regions, because better adapted than the drill to seeding in unplowed corn fields, on rough surfaces, and in weedy fields.

7. About one-sixth of the seed wheat (or 5,000,000 bushels for the crop) might be saved by the exclusive use of the drill.

8. The drill is used for seeding in connection with thorough culture, especially in winter wheat growing; the broadcast seeder for imperfect culture and rough surfaces; and sowing by hand is the method adopted for small patches and first efforts of *impecunious* pioneers.

THE ELEMENTS IN THE AIR.—Dr. Lee, a distinguished agricultural writer and chemist, said in an address before the N. Y. Agricultural Society:

"I regard it as one of the greatest discoveries of the age, that about ninety-seven per cent. of the ingredients which make up the whole substance of wheat, rye, corn, barley, oats, peas and beans, exist in the air in inexhaustible quantities. To transmute these aeriform bodies into the plants above named, and into grass and roots, *at the smallest expense*, is the object of nearly all your hard work."

This was spoken thirty years ago, and the Dr. says that the views then expressed will not now be called in question. The use of clover and plaster to enrich the land, he advises as the most ready means to accomplish the object of transmuting these gases into the plants named by him.

THE FARMER OF TO-DAY. This is what is said of him (it sounds like Joseph Harris) in the *Agriculturist*: "Altogether, the farmer has his hands full. He needs an active brain in an active body. If he has good health the work should not discourage him. He will pull through. He should not get excited; he should not worry. He should keep cool; and the best way to do this, in more senses than one, is to keep steadily at work. Work will clear the mind and cool the body. But it should be energetic, spirited work, not slow, plodding drudgery. Every stroke should be directed by the mind and be given with a will. It is such work that tells. Few of us realize how much the character of farm work has changed. It is better to run a mowing machine than to swing a scythe all day, but there are men who are not happy unless they are engaged in some hard, steady work. They have not patience enough to manage a machine. They are mental sluggards. They want a machine to put itself together, to tighten its own bolts, to be self-sharpening and self-oiling. Such men are born hewers of wood and drawers of water. They will not make successful modern farmers. The farmer who has his mower, tedder, unloading fork, self-raking and self-binding reaper; who cuts feed, turns the grindstone, and pumps water by wind or horse power; who plants his corn with a drill, hoes it with a harrow, cultivates within an inch of the rows, cuts up the crop, and husks it with a machine, is a very different man from Hodge, the farmer, as he exists in the mind of the novelist or poet. We believe in farmers and in farming. There is not as much isolation on a good farm as in a large city. There is no lack of excitement or of mental stimulus. We have not time to be dull. The seasons are too short and the work too pressing. We are in a hurry to harvest our crop that we may sow the next. We live in the future; and if we aim to improve our farms and our stock, we can yearly see sufficient evidences of real progress to feed our hopes and encourage us to continue our labors. Farming is slow work, but we are building on a solid foundation, and are reasonably certain of our reward. Let us brace our minds with hope and continue the good work. The prospects for good farmers in this country were never more encouraging than at the present time."

The *News and Courier*, of Ga., says: "The success which attends hard work and thorough cultivation in the up-country, particularly in the raising of cotton, is shown by instances of large returns from small means that came to our knowledge yesterday. 1. Turner Wiggins, a colored man, who lives in Pickens county, made this season ten bales of cotton on nine acres of land. 2. Wm. Perry, planting very thin land, in the same county, made 3,500 pounds of lint cotton on 1¼ acres. 3. Z. Powers, in the same county, made 1,000 pounds of cotton on one-fourth of an acre. 4. Mr. Moser, in the same county, made 8½ bales of cotton and 650 bushels of corn. This was made by the work of Mr. Moser, his wife and little boy, and one horse. Mr. Perry used one bag of Atlantic phosphate as a fertilizer, and Z. Powers used stable manure."

Hygiene.

SUMMER DIET FOR FARMERS.—Out-door work gives a man the stomach of an ostrich, so far as digestion is concerned, and enables him to eat with impunity what would kill one of sedentary habits. But there is no advantage in taxing the digestive organs of out-door workers beyond what is necessary. At this season of the year, particularly, pork should be eschewed. It furnishes heat rather than muscle, and in haying and harvesting muscle is of more value than heat for the laborer.

During the hot season milk, bread and cheese, lean mutton or beef in moderate quantity, vegetables, and fruits, should constitute the chief articles of diet. The English farm-laborer makes great use of bread and cheese. These constitute his luncheon in the field, and are recommended both by instinct and science. Casein or cheese is muscle-forming in its elements, and it were well if our laborers were more addicted to its use. Cheese is too heavy to be eaten alone, and bread is its natural supplement and concomitant. There is more muscular strength furnished by a pound of cheese than by two pounds of meat, and the cost of the cheese per pound is generally much less.

For drink, use milk, or molasses and water, with a little cider or vinegar in it. The ultra-temperance folks may object to the cider, but diluted with water and used in moderation the acid is wholesome to most stomachs, and corrects the bilious tendency which is so common. We are bound to express our honest convictions on this point, though we may offend the radical temperance reformers. A few years since we became so bilious from working in the hay-field that we were as yellow as saffron, but a little sour cider effected a cure which drugs had failed to effect. In the use of it, however, let your moderation be known, and just as much let your moderation be known in the use of ice-water. Too much cold water introduced into the stomach causes a paralysis of that organ, and brings on suffering in abundance. The temptation is very great when perspiration is free to drink cold water to excess, but a little quenches thirst and answers a better purpose than to gulp it down as though a man's body was a hogshead.—*Cor. N. Y. Times.*

THE BEST DRINK for sedentary persons is hot tea and coffee of moderate strength, and that at meal times; it is the best drink at meals for all who are past fifty years of age; all such will live longer by the use of these as a beverage than by the use of cold water as a beverage. The fact is observable with the naked eye, that a glass of cold water during a meal arrests digestion instantly, which process can only be resumed when this cold water, of fifty degrees, has been long enough in the stomach to absorb heat sufficient from the body to warm it up to a hundred degrees. That a hot cup of tea at a meal does revive a person who is old, or feeble, or cold, or tired, is the daily experience of millions. If a healthy person greatly desires a drink of cold water during a meal, let him take it by all means; it is only intended to inculcate the general idea for the masses, that the habitual and large use of cold water at a meal, or within half an hour before or after, is not wise, is not safe, and that a cup of hot drink is always safe, is always beneficial, is always reviving; if now and then there is an exception, it should be set down as a peculiarity or an idiosyncrasy.—*Journal of Health.*

FARMING IN IRELAND.—S. L. Lyman, in the *Rural Sun*, says, that the farmer of a large estate in Ireland, has a long lease generally on the land, for which he pays about $160 an acre, amounting to say £800 a year. Fourteen field hands, one overseer and 21 gardeners are employed the year round. One thousand large sheep are kept on such a farm, their wool 6 inches long. Flax is also raised for home supply; the lady of the house superintends the manufacture and making up of the flax and woolen fabrics, aided by the maiden daughters and female servants, who supply all hands with all the clothing required for decency and comfort, so that boots and hats are the only articles that are bought from Middlemen. The writer says: "The rotation of crops in Ireland, of a farmer of a large estate, is precisely as follows: Suppose a field of three hundred acres, properly prepared for tillage, planted the first year with potatoes, is in the second year prepared for wheat or barley; in the third year for oats sown broadcast; in the fourth year for peas. The fifth year, the same field left untilled, the grass grows spontaneously, and a proper place for grazing one thousand sheep for many years to come, is opened. So the land in Ireland is in fair tillable state at present, as it has been for a thousand years."

WHAT $5 DID—THE REWARD OF PATIENT TOIL AND INDUSTRY.—We were shown yesterday several samples of wool from a recent shearing from some sheep in the State of Illinois. The wool is of a very fine quality, that taken from the male being over two feet long. Of the sheep sheared the average weight of wool from each was 28 pounds, which will, we think, beat anything we have heard of, and will, no doubt, astonish some of of our thrifty sheep-growers of Delaware.

But this remarkable yield of wool has a Delaware history which may not be uninteresting. Nine years ago, a lady, residing at Twelfth and King streets, who, through modesty, does not wish her name published, sent $5 to her little grandson in Illinois, then not quite nine years of age, to buy a couple of sheep, and try what he could make out of the purchase. True to the instructions of his grandmother, the little fellow bought two sheep, which became the nucleus of a flock of 50 which he now owns, and from which he has laid away enough money to purchase 46 acres of the best grazing land in Illinois. The Delaware grandmother feels very proud of her Western grandson, who is not yet 18 years of age, and gives such fair promise of becoming the leading wool-grower in the great State of Illinois.—*Wilmington (Del.) Tribune.*

Domestic Recipes.

POTATO SALAD.—Boil some new potatoes and let them get cold; then cut them in slices, and arrange them neatly, in some sort of a pattern, or a dish, with hard-boiled eggs cut into quarters, slices of beet-root stamped out into shapes, and olive stones. The dish should be slightly rubbed with a shallot. Make a sauce with two parts oil and one tarragon vinegar; pepper and salt, a little tarragon, some capers, chervil, parsley, and a few leaves of thyme, all finely minced; beat the sauce well together, pour over the salad and serve.

SWEET PICKLE OF APPLES.—Take three pounds of sugar, three quarts of vinegar (not very strong), ten pounds of sweet apples; pare, quarter and core the apples, put sugar and vinegar together, boil and skim it, then take half the syrup out into another vessel, put so many of the apples into your preserving pan as will boil conveniently, and boil until tender; then skim those out and add more apples and syrup, till all are done. Spice with whole cloves and nutmeg. Keep in a cool dry place.

SWEET POTATO CORN BISCUIT.—Three large potatoes boiled and mashed into a pint of meal, one tablespoonful of lard, one of sugar, one egg, and salt to taste. Bake in pone or as plain biscuit. They are a delightful dish.

MINUTE SPONGE CAKE.—Beat three eggs two minutes; add one and a-half cups of sugar, beat two minutes; one cup of flour and one teaspoonful of cream of tartar, beat one minute; add half a cup of cold water with half a teaspoonful of soda and a spoonful of extract of lemon, beat one minute; add one cup of flour, beat one minute.

COCOANUT CAKE.—Take three eggs, one cup powdered sugar, one cup flour, one-half cup sweet milk, one teaspoonful baking powder; bake in layers, as if for jelly cake; beat the whites of five eggs with powdered sugar and grated cocoanut until it is of proper consistency; spread the layers with it; also spread the top; then grate an additional cocoanut, as much as will adhere readily, heaping it up into peaks.

CREAM CAKE.—One cup sour cream, one cup sugar, two and one-half cups flour, two eggs, one teaspoon even full soda; dissolve the soda in two teaspoonfuls boiling water; stir sugar and eggs well together, then add soda and flour; flavor with lemon; bake in moderate oven.

CREAM RENVERSEE.—Mix three tablespoonfuls of flour with a gill of cold milk, and then add a gill of scalded milk. Put it in a saucepan over the fire and stir until it begins to thicken, then take it off and add four ounces of white sugar and the yolks of four eggs, with a teaspoonful of lemon extract or any flavor you like. Then beat the whites of the eggs to a stiff froth and stir it in the mixture: place it in a buttered pan or mould and set it in a kettle of boiling water to rise. After it has risen bake it in a mild oven, and, when cool, turn it out on a dish upside down.

Useful Recipes.

MENDING WATERING POTS.—The *Country Gentleman* says:—Tin watering-pots much used in the garden often become rusted at the lower corners, and begin to leak. It is not necessary yet to throw them aside, as the holes may be effectually stopped without going to the tinker's, by covering them inside with a small piece of linen dipped in copal varnish, the tin being previously thoroughly dried. When the varnish hardens by drying, they are perfectly water-tight.

CLEANING TINWARE.—The best thing for cleaning tinware is common soda. Dampen a cloth and dip in the soda, and rub the ware briskly, after which wipe dry. Any blackened or dirty ware can be made to look as well as new.

SUMAC POISONING.—The immediate and frequent application of hot water is a good remedy for poisoning from sumac. Sugar of lead will usually allay the itching. If very bad, and surface badly swollen, a poultice of oat meal, renewed three times a day until the irritation and swelling subsides, is a sure remedy, and effectually removes the poison from the system.

NEURALGIA REMEDY.—The following recipe was given to our readers in 1871, and the relief it has furnished induces us to republish:—Prepare horse-radish by grating and mixing in vinegar, the same as for table purposes, and apply to the temple where the face or head is affected, or the wrist when the pain is in the armor shoulder.

A SIMPLE DISINFECTANT.—One pound of green copperas, costing seven cents, dissolved in one quart of water, and poured down a water-closet, will effectually concentrate and destroy the foulest smells. On board ships and steamboats, about hotels and other public places, there is nothing so nice to purify the air. Simple green copperas, dissolved in anything under the bed, will render a hospital or other places for the sick, free from unpleasant smells. In fish-markets, slaughter-houses, sinks, and wherever there are offensive gases, disssolve copperas and sprinkle it about, and in a few days the smell will all pass away. If a cat, rat or mouse dies about the house, and send off offensive gas, place some dissolved copperas in an open vessel near the place where the nuisance is, and it will purify the air. Then, keep all clean.

RAT REMEDY.—Take copperas—the quantity to depend upon the number of buildings or places infested—pulverize it very fine, and be sure and sprinkle some in all their holes, in the corn crib, under all the buildings, in a word, wherever they congregate, and in a few days all the rats will be gone. This is very simple and easily tried, and has proved completely successful several times at different places. No rat seen three days after a thorough application. (Doubtful!—*Ed.*)

TOOTHACHE DROPS.—One ounce alcohol, two drachms cayenne, one ounce kerosene oil; let it stand twenty-four hours after mixing. It cures the worst case of toothache.

Contents of August No.

Baltimore Markets, July 29.

The quotations below are Wholesale Prices.

Breadstuffs.—*Flour*—Demand moderate; prices steady. Howard St. Super $4.25@4.75; do. common to fair Extra, $5.25@5.50; do. good to choice do. $5.75@6; do. Family $6.25@7.50. Ohio and Indiana Super $4.25@4.75; do. common to fair Extra $5.00@5.25; do. good to choice do. $5.50@5.75. City Mills Super $4.25@4.75; do. low to Medium Extra $6.00@6.50; do. Rio brands do., $7@7.25. City fancy brands $9.50. Fine Flour $3.50@4.00. Rye Flour, $4.75@5.25. Corn Meal, $3.75@4.00.

Wheat.—Demand fair. We quote Southern white 140@145 cents; fair to good red 125@130 cents; prime do. 138@140 cts.; good to choice amber 140@143 cts.; Western amber 132@137 cts.; do. red 122@128 cents.

Corn.—Dull. Southern white 90@92 cents; yellow 85@86 cts.; Western mixed 78@80 cents.

Oats.—Supply large; market dull. We quote Southern 58@60 cents; bright Western 62 cents.

Rye.—Quiet at 80@85 cents for fair to prime.

Cotton.—Dull and heavy. We quote as follows:—Middling 16½@16¾ cents; low middling 15⅝@15¾ cents; Strict good ordinary 15 cts.; good ordinary 14¾@14½ cts.; ordinary 13@13⅝ cents.

Hay and Straw.—Demand moderate. Clover $13@14; Timothy $21@23; Cecil county do. $24@25; Rye Straw, $14@15; Oat Straw $13. Wheat do. $10@11 ℔ ton.

Live Stock.—*Beef Cattle*—Market dull. Prices range as follows: Best on sale 5⅞@6⅛ cents; generally rated first-class, 4½@5⅝ cts.; medium—a good fair quality, 3¾@4¼ cts.; ordinary thin Steers, Oxen and Cows, $3@3.75.

Hogs—Receipts large. Prices firm at 9@9¼ cts. net.

Sheep.—In good supply. Prices range at 4@5¼ cts., gross. Lambs, $2@4.50 ℔ head. Stock Sheep, $2.25@3.50 each.

Mill Feed.—Western Brownstuff $21@22; City Mills do. $22@23 ℔ ton. Light Middlings 32@35 cents; heavy do. 45@50 cents ℔ bushel.

Molasses.—Muscovado 39@42 cents; Porto Rico, 40@65 cts.; English Island 40@55 cts. *Syrups.*—Calvert, 58@65 cents; Baltimore 55@60 cents; Canton Sugar-House, 33@36 cts., in hhds. and bbls.

Provisions.—Market buoyant. Bulk Shoulders 8¼ cents; clear rib-Sides 11 cts. Bacon, Shoulders, 9½ cts.; Clear rib sides 12 cents. Hams, 17½@18 cts. Lard, 13½@14 cents. Mess Pork, $24@25 ℔ bbl.

Rice.—Carolina, 8@8½ cents; Rangoon, 7 cents.

Salt.—Liverpool Fine $2.30@2.35; Ground Alum $1.25@1.30 ℔ sack. Turks Island, 32@35 cents ℔ bushel.

Seeds.—Clover $6.75@7; Timothy $3.22@3.37; Orchard Grass $2@2.12 ℔ bushel.

Tobacco.—Receipts light. Maryland in good demand; Virginia quiet, but firm. We quote Maryland frosted $4@5; sound common $5@6.50; good common $6.50@7.50; middling $8@9; good to fine red $13@18; Virginia common and good lugs $5.50@7.50; common to medium leaf $7.00@9.50; fair to good leaf $10@11.50; selections (shipping) $12@15.

Whiskey.—99 c.@$1.

FOR SALE.

AYRSHIRES AND SOUTH-DOWNS.—2 heifers, 2 years old; bull, 18 months; selected from the celebrated herd of Wm. Birnie of Springfield, Mass. 4 ewes and 4 ewe lambs from the flock of Geo. H. Brown, of Dutchess Co., New York. WM. B. MATTHEWS.
aug-2t Port Tobacco, Md.

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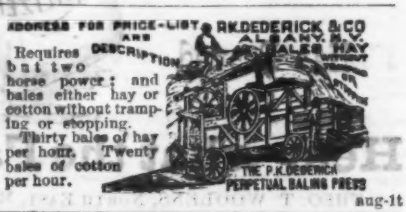

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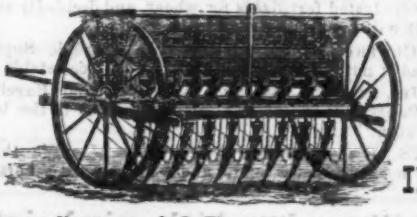
SUPERIOR

GRAIN DRILL,



THE ONLY GRAIN DRILL PERFECT IN THE WORLD

Having a Successful Fertilizer Attachment.

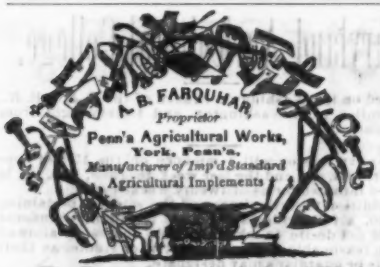
Certain in Distribution, accurate in measurement of Seed used, and possessing more facilities and conveniences for adjustment to quantity and practical operations in the field than any or all other Drills manufactured. ALSO, AGENT FOR

DIAMOND STATE SEPARATOR,

WITH 4, 6 OR 8 HORSE-POWER.

Sole Agent for BALL'S CELEBRATED STEEL PLOUGHS. These Ploughs are of very Light Draft, and easily convertible into cast or combination by the farmer. Send for a Circular. Also, PERUVIAN GUANO, and BONES of all grades.

JOHN C. DURBOROW,
aug-3t **No. 55 Light Street, near Pratt, Baltimore, Md.**



PENNSYLVANIA Agricultural Works, YORK, Pa.

A. B. FARQUHAR

MANAGER AND PROPRIETOR.

The Pennsylvania Agricultural Works is one of the most extensive establishments of its kind in the United States. It is furnished with improved Machinery, Foundry, Forging Rooms, Planing and Sawing Mills, Lumber Yard, &c., complete within itself. It is situated among the great Iron, Coal and Lumber fields, which form the basis of all manufacturing; and I would respectfully call the attention of the public to these advantages, confident of meriting an extended patronage.

The following are among the specialties:

AGRICULTURAL STEELS, PLOWS, CULTIVATORS, HORSE RAKES, PLOW HANDLES,

Threshing Machines, Horse Powers, &c.

HORSE POWERS.

The Horse-Power is one of the most important implements, and probably the most difficult to keep in order; too much care, therefore, cannot be used in selecting the very best.

I have long made the manufacture of Horse-Powers a specialty, and can safely recommend my improved Iron-Geared Powers to be all that I claim for them.

FARQUHAR'S CLIMAX HORSE-POWER,

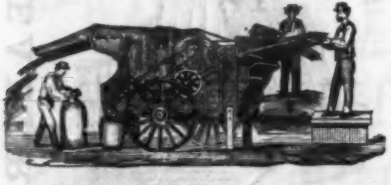
For Threshing, Ginning and General Farm Use,

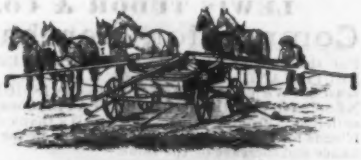
ranks first; being the result of many years' labor, "practice with science," and the expenditure of thousands of dollars in experimenting.

It is remarkable for its light draft, simplicity, great strength and durability. It is fitted up wtih as much care as a piece of cotton machinery or steam engine, and will last as long. The rule, the "best is the cheapest," applies with special force to Horse Powers.

THE PELTON OR TRIPLE-GEARED IRON POWER.

This well known power is noted for its strength, cheapness and general efficiency. Like the Climax, the gearing is all secured in an iron frame, and is uninjured by the weather. The pinions are made of chilled iron, and no pains are spared to make it a first-class, cheap power.





Improved Railway Horse-Powers, Threshers and Separators,

Have been a specialty with me for many years, and those who favor me with their orders may rely upon getting a machine which will run as light, waste less grain, and give more general satisfaction than any offered.

PLOW HANDLES.

Having improved Blanchard machinery for the manufacture of Plow Handles upon an extensive scale, I can supply first quality Handles, side bent to order for any pattern of plow.

☞ For further particulars, address

jy–1y **A. B. FARQUHAR, York, Pa.**

To the Growers of WHEAT.

THE CONTINUED SUCCESS OF THE

SOLUBLE SEA ISLAND GUANO

Must convince the most skeptical farmer of its excellence as a WHEAT FERTILIZER.

POPLAR SPRINGS, HOWARD COUNTY, MD., March 7th

Messrs. RASIN & CO.

Dear Sir—I have used your Soluble Sea Island Guano for the past two years with perfect success on wheat, rye, corn, oats and potatoes. My neighbors have used it on tobacco with equal success. I think it equal to any fertilizer in the market. It is in a better condition for drilling than any I have used. Most of the fertilizers offered are not fit for the drill until they are riddled.

Yours, very respectfully, DAVID BURDETTE.

HOWARD COUNTY, MD., March 7th, 1874.

Messrs. R. W. L. RASIN & CO.

Gentlemen—I have used your Soluble Sea Island Guano for the last three years upon wheat and other grain and vegetables, and cannot say otherwise than I am perfectly satisfied with the result. Respectfully, JACOB GERWIG.

SKIPTON, TALBOT COUNTY, MD., March 7th, 1874.

Messrs. R. W. L. RASIN & CO.

Gentlemen—Yours of 4th inst. at hand. Am pleased to write the Soluble Sea Island Guano is giving entire satisfaction. The prospect for wheat is first-rate—probably never better in our county. My own observation is that the action of Soluble Sea Island Guano is fully equal to any article in our neighborhood, viz: Turner's, Ober & Sons, and various other manufacturers.

Yours truly, J. A. F. NEAL.

NEW MARKET, FREDERICK CO., MD., September 3d, 1872.

Messrs. G. M. SMITH & BRO.

Gents—I was prevailed on last fall to try, as an experiment, one bag of R. W. L. Rasin & Co.'s Sea Island Guano. I used this alongside of other fertilizers, sowing the same amount to the acre. The wheat grew off finely, and when I cut my crop, the straw and wheat was considerable heavier where this one bag was used. From the very slight experiment made, I am persuaded it is No. 1 Guano.

Yours, very truly, CHARLES SALMON.

J. K. FOUST, Centreville, York County, Pa., says—We tried your Soluble Sea Island Guano on wheat, by the side of the other fertilizers sold here, and there is at least twenty per cent. difference in favor of yours, and parties who have used it have engaged more for the wheat this season.

PRICE $50 PER TON, IN SUBSTANTIAL BAGS.

R. W. L. RASIN & CO.,

S. W. cor. South and Water Sts.

BALTIMORE.

aug-1y

THE NEW LIGHT-RUNNING

"HOWE"

SEWING MACHINE

HAS JUST BEEN AWARDED THE

HIGHEST PREMIUM!

AT THE

Vienna Exposition,

FOR ITS SUPERIOR SEWING & STITCHING!

GENERAL OFFICE FOR THE STATES OF

Maryland, Virginia, N. Carolina, S. Carolina:

38 N. Charles St.

BALTIMORE, MARYLAND.

AGENTS WANTED in every County of the above States.

Liberal inducements and large pay to energetic men.

Wagons furnished and no Capital required.

Machines Sold on Easy Terms.

sep-1y